The Impact of Economic Crisis on Welfare of Rural and Urban Households: a Case Study of Indonesia

Tri Widodo

Economics Department, Faculty of Economic and Business, Universitas Gadjah Mada, Indonesia

1 January 2000

The Impact of Economic Crisis on Welfare of Rural and Urban Households: a Case Study of Indonesia

By:
Tri Widodo
Economics Department, Faculty of Economic and Business, Universitas Gadjah Mada, Indonesia

The Impact of Economic Crisis on Welfare of Rural and Urban Households: a Case Study of Indonesia

Abstract

The economic crisis has led to decreases in the welfare of urban and rural households. This paper applies EV (equivalent variation) and CV (compensating variation) derived from the Linear Expenditure System (LES) to calculate the change in the welfare of urban and rural households that were caused by changes in income and prices. This paper has several conclusions. First, urban families were affected by the crisis in more severe condition rather than rural families. Second, among the regional -Sumatra, Java, Kalimantan, Sulawesi and others-urban and rural families in Kalimantan were affected by the economic crisis in the worst condition than the other regions.

Keyword: Welfare impact, Equivalent Variation (EV), Compensating Variation (CV), Linear Expenditure System (LES), Seemingly Uncorrelated Regression (SUR).
JEL: D11, D60

I. INTRODUCTION

The deep economic crisis in Indonesia has had implications for poor and rich household's welfare in both rural and urban area. An Asian Development Bank Report (ADB 1999) stated that the poor have been most hit by the economic crisis. Indonesia had 21.9 million poor people in 1995 and a 25 percent increase in the poverty line results in more than doubling the head count index, from 11 to 25 in 1996 (ADB 1999: 77). In Indonesia poor people are most likely to stay in rural areas, therefore it might be believed that the society most affected by the economic crisis is rural society.

The individual household has decreases in welfare due to the economic crisis through two effects i.e. decreasing in household's income and increasing of commodity prices. The

decrease in income is not only because of decrease in wage rates but also, more fundamentally, because the fall in the demand for labour leads to unemployment. A lot of labour intensive industries -i.e. real estate and property, services, construction, banking etc- are hit by the economic crisis, therefore they have to reduce the amount of labour employed. In consequence, unemployment is a social phenomenon that might not be avoided.

The second effect is the increase of commodity prices that automatically lower the purchasing power of households. In other words, the household's real income decreases. Again, the poor people are deeply affected by the economic crisis. But, it is widely believed that the decrease of labour demand and the increase of commodity prices are more serious in urban than rural areas (ADB 1999:80). Therefore, it was believed that the society mostly affected by the economic crisis is urban society. One of the conclusions of the recent survey conducted by Sumarto, Wetterberg and Pritchett (1999) by interviewing three expert respondents in every *kecamatan* (sub-district) in Indonesia is that urban areas have been harder hit by the economic crisis than rural areas. Evidence on whether rural or urban households have borne the brunt is ambiguous. There might be little argument that both households have been affected, although not necessarily for the same reason. On the one side, the relative increase in the price of agriculture products has provided net producers some protection from crisis. On the other hand, the agricultural sector has been the primary absorbing sector for employment (Frankenberg, Thomas and Beegle 1999). The ADB Report (1999:80) describes that rural areas are also effected:

> This is not essentially an urban shock, despite the high profile of urban unemployment figures. Rural areas will also seriously affected by labor movements, production linkages, and intra-household

> relationship because of the highly integrated nature of the urban and rural economies and the declining in urban areas. Increased under-employment and falling wages may be more widespread and valid indicators of a decline in well-being than unemployment statistics.

Although some researchers have indicated the different impact of the economic crisis on the rural and urban society, they do not give explicit indicators of the impact. This research compares quantitatively the impact of the economic crisis on both rural and urban households. Some people might also argue that the poorest households, whether urban or in rural areas, are most affected by the crisis. Therefore, this research is also addressed to look at the effect of the economic crisis on the poorest households' welfare. The poorest household in this study is defined as the household that has the lowest group expenditure (the minimum amount) derived in a part of this study and the lowest level of income.

This paper aims to analyze the impact of the crisis on individual household's welfare in both rural and urban areas. Briefly, the paper attempts to answers three questions:

1. How has the economic crisis affected the welfare of rural and urban households?
2. Which households, rural or urban, are most effected by the economic crisis?
3. How has the economic crisis affected the welfare of poorest households?

The household's welfare in this study deals with the its food consumption, because food consumption can reflect the household's welfare. The household's food consumption will create utility (welfare) to the household. Theoretically, the demand for food is a function of prices and income (by definition of Marshallian demand function). Therefore, change in income and food prices will affect food consumption and, indirectly, household's welfare. This is the definition of welfare that will be used in this study.

The scope of welfare definition in this study, therefore, only covers the household's utility created by food consumption. In fact, a household consumes not only foods but also non-food such as housing, clothes, transportation, energy (electricity), education, entertainment, etc. All non-food consumption also creates utility (welfare). This study only uses the narrow definition of welfare (created by food consumption only) due to availability data and mainly the aim of the study. The data about non-food consumption is not available, unlike the data about food consumption recorded every year for some provinces. The main aim of this study is to compare the impact of economic crisis on the welfare in rural and urban areas. Therefore, it is more comparable if the study only focus on the food consumption because there is no much difference in food consumption between rural and urban household, unlike the non-food consumption that is quite difference between rural and urban household.

The rest of this paper is organized as follows. In part II, the social impact of economic crisis on households is briefly discussed. Part III gives the theoretical framework that will be used to answer the four questions of the research. Data, estimation and some basic settings are in part IV. Research findings will be presented in part V. Finally, some conclusions are in part VI.

II. THE SOCIAL IMPACT OF ECONOMIC CRISIS: SOME FIGURES

How far has the economic crisis burdened the society? Some qualitative surveys have been conducted to find the social and welfare impact of economic crisis on urban and rural areas in Indonesia. Based on interviewing three expert respondents i.e. the agriculture officers (*mantri tani*) in rural or the development officer (*kepala seksi PMD*)

in urban areas, the school supervisor (*penilik sekolah*) and the health officer (*dokter puskesmas*) in every sub-district (*kecamatan*); Sumarto, Wetterberg and Pritchett (1999) conclude that urban areas have been harder hit by the economic crisis than rural areas. Both rural and urban areas on Java have been hard hit by the crisis, also some other islands particularly Sumatra, Sulawesi and Maluku have experienced much less negative economic crisis. Other areas represent negative impacts of crisis, but it is ambiguous whether the problem is caused by economic crisis or by drought (East Timor, Nusa Tenggara Timur (NTT), Nusa Tenggara Barat (NTB)) and fires (Kalimantan).

Table 1. The Rank of Problem in *Kecamatan*

	% of respondent ranking as priority problem		
Problem	**Urban**	**Rural**	**Total**
Unemployment	6.5	20.1	27
Finding staple food	3.5	17	21
Loss of income	4.5	20	25
Children dropping out of school	0.3	1.5	2
Reduction in health service	0.3	1.4	2

Source: Sumarto, Wetterberg and Pritchett (1999)

This survey also tries to find the impact of economic crisis on food security, employment and wage, education and health. Then these problems are ranked according to "priority" problem faced by society. Table 1 shows the ranking of the problems due to the economic crisis. The survey concludes that 'unemployment' (particularly in urban areas), 'loss of income' and 'finding staple food' are the three biggest problems for both urban and rural society. Those problems have higher ranking than 'children dropping out of school' or 'reduction in health service'. Overall the loss of the real purchasing power of incomes that is effected by less employment and rising in prices of food staples, is the predominant concern (Sumarto, Etterberg and Pritchett 1999:16).

Table 2. The Average Household Expenditure: 1997, 1998 and Changes

Residence	Total Household Expenditure			Per Capita Expenditure		
	1997	1998	% Change	1997	1998	% Change
Inflation from BPS prices						
Urban	1227	944	-23%	319	211	-34%
Rural	705	738	5%	127	125	-13%
Inflation from BPS prices adjusted for IFLS						
Urban	1227	822	-33%	319	184	-42%
Rural	705	560	-21%	194	128	-34%

Source: Frankenberg, Thomas and Beegle (1999). Note: All expenditure estimates are converted to monthly equivalents in Rp 000.

The same result is also found by Frankenberg, Thomas and Beegle (1999) by using data from the Indonesia Family Life Surveys (IFLS, IFLS2, IFS2+). They conclude that from estimates based on the Central Bureau of Statistics (*Badan Pusat Statistik*, BPS) of Indonesia prices alone, the data suggest that urban households have been more seriously impacted by the crisis, the per capita expenditure (PCE) of the urban household has declined by 34%, while for rural households it has declined by only 13%. And these decline one quarter when inflation is adjusted, i.e. 42% and 34% for urban and rural households respectively. Meanwhile, the average total household expenditure has declined by 23% for urban household and has increased by 5% for rural household. But if the adjusted inflation is used, the average total household expenditure has decreased by 33% and 21% for urban and rural areas respectively. The result of the research on employment, education, health care is in almost the same direction.

The Asian Development Bank (ADB) has noted that the economic crisis has brought some effects on households: falling labour demand, increase of prices, a public spending squeeze and erosion of the social fabric (ADB, 1999:80). In 1996, almost 4.5 million were unemployed and official estimates suggest an additional 10 million may be unemployed by early 1999. But it did not happen so this prediction is unrealistic; it is likely that many of unemployed people will move into low paying urban, rural informal

sector work and agricultural work (Manning 2000:119). Increases in prices of basic necessities such as food and medicine might not be avoided due to the exchange rate devaluation. The 80% depreciation since July 1997 increased the consumer price index (CPI) by more than 50% between June 1997 and March 1998 (ADB 1999:81). Due to the government budget, public services may still suffer cutbacks, creating negative impact on household.

III. THEORETICAL FRAMEWORK

The main aim of this study is to estimate the welfare effect of the economic crisis for both rural and urban households. The welfare analysis in this study is mainly focused on food fulfilment, i.e. utility (welfare) created by food consumption. Theoretically, the demand of food is a function of prices and income (by definition of Marshallian demand function). Therefore, some changes in income and food prices will affect food consumption and, indirectly, household welfare.

Technically, the welfare change could be measured by how much money is needed by households to compensate the change in food prices and income originating in Hicks (1939), namely Equivalent Variation (EV) and Compensating Variation (CV). The Equivalent Variation (EV) can be seen as the dollar amount that the household would be indifferent to in accepting the changes in food prices and income (wealth). The Compensating Variation (CV) measures the net revenue of the planner who must compensate the household for the food prices and income changes, bringing the household back to its welfare (utility level) (Mas-Colell, Whinston and Green 1995:82).

3.1. Estimate Demand, Indirect Utility and Expenditure Function

To measure the welfare change, we have to estimate the household expenditure function. To do that some steps should be followed. Firstly, the household utility function should be established. And in this study, the household's utility function is assumed to be Cobb-Douglas which can derive the Linear Expenditure System of demand (Stone, 1954). This assumption is taken because the Linear Expenditure System (LES) is suitable for the household food consumption/demand[1]. Secondly, the Linear Expenditure System of household demand can be estimated by using available data. Therefore, the household demand function (Marshallian and Hicksian) for each food commodity can be found.

From the estimated demand function, we can derive the household indirect utility and expenditure function. Finally, the welfare change can be measured by comparing the household expenditure pre-crisis and post-crisis to get the same utility (welfare). These stages will be expressed in the next paragraphs.

Marshallian Demand System

In this study, it is assumed that the rural and urban households have a utility function following the more general Cobb-Douglas. Stone (1954) made the first attempt to estimate a system equation explicitly incorporating the budget constraint, namely the Linear Expenditure System (LES). In the case of developing countries, this system has

[1] For detailed information, see Barten (1977), Deaton and Muellbauer (1980), Philips (1993) and Deaton (1986).

been used widely in the empirical studies in India by some authors (Pushpam and Ashok (1964), Bhattacharya (1967), Joseph (1968), Ranjan (1985), Satish and Sanjib (1999)).

Formally the individual household's preferences defined on n goods are characterized by a utility function of the Cobb-Douglas form. Klein and Rubin (1948) formulated the LES as the most general linear formulation in prices and income satisfying the budget constraint, homogeneity and Slutsky symmetry. Basically, Samuelson (1948) and Geary (1950), derived that the LES representing the utility function:

$$U(x_1 \ldots\ldots\ldots x_n) = \left(x_1 - x_1^o\right)^{\alpha_1}\left(x_2 - x_2^o\right)^{\alpha_2}\left(x_3 - x_3^o\right)^{\alpha_3} \ldots\ldots\ldots \left(x_n - x_n^o\right)^{\alpha_n}$$

In brief, it can be expressed as:

$$U(x_i) = \prod_{i=1}^{n}\left(x_i - x_i^o\right)^{\alpha_i} \qquad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where:

$\sum_{i=1}^{n} \alpha_i = 1$

$x_i - x_i^o > 0$

$0 < \alpha_i < 1$

Π is product operator

x_i is consumption of commodity i

x_i^o and α_i are the parameters of the utility function

x_i^o is minimum quantity of commodity i consumed

$i \in [1,2,3 \ldots\ldots n]$

The individual household has income M and faces the competitive prices of commodity i ie. p_i. Therefore, the individual household's budget constraint becomes $\sum_{i=1}^{n} p_i x_i \leq M$, where i is [1,2,3……..,n]. Two assumptions are imposed on the individual household's budget constraint. The first assumption is that the budget constraint is satisfied with equality. This means that the individual household exhausts income to maximize utility (non-satiation). The second assumption is that a decision on how much income to allocate

to total expenditure is independent of the decision on how to allocate total expenditure amongst all possible goods (*Two-stage budgeting*). These simplifying assumptions lead to linear estimating equations for food consumption and it is shown how the model's structural parameters, i.e. those of household preferences, can be identified for use in the calculation of welfare gains and losses from price changes. Therefore, the budget constraint can be expressed in the matrix form as follows:

$\mathbf{PX} = M$ ……..……..(2)

where:

P is a price vector (p_1 p_2 p_3 …… p_n)

X is a commodity vector :

$$\begin{pmatrix} x_1 \\ x_2 \\ x_3 \\ . \\ . \\ . \\ x_n \end{pmatrix}$$

The individual household's problem is to choose x_i that can maximize its utility $U(x_i)$ subject to its budget constraint. Therefore, the optimal choice of x_i is obtained as a solution to the constrained optimization problem as follows:

$$\underset{x_i}{\text{Max}} \quad U(\mathbf{X}_i) = \prod_{i=1}^{n} \left(\mathbf{X_i} - \mathbf{X_i^o}\right)^{\alpha_i}$$

Subject to:

$\mathbf{PX} \leq M$

To solve the problem, the Lagrange method can be applied. The Lagrange formula for this problem is:

$$\underset{x_i}{\text{Max}} \quad \Omega = U(\mathbf{X}_i) = \prod_{i=1}^{n} \left(\mathbf{X_i} - \mathbf{X_i^o}\right)^{\alpha_i} + \lambda(\mathbf{M} - \mathbf{PX}) \qquad \text{……..……..(3)}$$

Where: λ is the Lagrange multiplier. It is interpreted as the marginal utility of income showing how much the individual household's utility will increase if the individual household's income M is increased by $1.

Take the derivatives and get the first order condition (FOCs):

$$\frac{\partial \Omega}{\partial \mathbf{X}_i} = \alpha_i \frac{U}{\left(\mathbf{X}_i - \mathbf{X}_i^o\right)} - \lambda \mathbf{p}_i = 0 \qquad \text{……..……..(4)}$$

where: $U = \prod_{i=1}^{n} \left(\mathbf{x}_i - \mathbf{x}_i^o\right)^{\alpha_i}$

$$\frac{\partial \Omega}{\partial \lambda} = M - PX = 0 \qquad \text{…….……...……...(5)}$$

In matrix form (4) and (5) can be represented as follows:

$$\begin{pmatrix} \frac{1}{U\alpha_i} & 0 & 0 & 0 & \ldots. & \ldots. & \ldots. & \ldots. & 0 & -\frac{1}{p_1} \\ 0 & \frac{1}{U\alpha_2} & 0 & 0 & \ldots. & \ldots. & \ldots. & \ldots. & 0 & -\frac{1}{p_2} \\ 0 & \ldots. & \ldots. & \ldots. & \ldots. & \ldots. & \ldots. & \ldots. & 0 & \ldots. \\ 0 & \ldots. & \ldots. & \ldots. & \ldots. & \ldots. & \ldots. & \ldots. & 0 & \ldots. \\ 0 & 0 & 0 & 0 & \ldots. & \ldots. & \ldots. & \ldots. & \frac{1}{U\alpha_n} & -\frac{1}{p_n} \\ p_1 & p_2 & p_3 & p_4 & \ldots. & \ldots. & \ldots. & \ldots. & p_n & 0 \end{pmatrix} \begin{pmatrix} x_1 \\ x_2 \\ \ldots. \\ \ldots. \\ x_n \\ 1/\lambda \end{pmatrix} = \begin{pmatrix} \frac{x_1^o}{U\alpha_1} \\ \frac{x_2^o}{U\alpha_2} \\ \ldots. \\ \ldots. \\ \frac{x_n^o}{U\alpha_n} \\ M \end{pmatrix}$$

$$A \qquad x \qquad B \qquad = \qquad C$$

Equation (4) tells us that the marginal utility of x_i is equal with the marginal utility of income multiplied by price of x_i. From (4) and (5), we have n+1 unknown variables ($x_1, x_2, x_3, \ldots\ldots x_n, \lambda$) and n+1 equations. By applying Cramer's rule, the unknown variables ($x_1, x_2, x_3, \ldots.. x_n, \lambda$) can be found.:

$$\mathbf{X}_1 = \frac{|\mathbf{A}_1|}{|\mathbf{A}|} \qquad \text{……(6)}$$

Where $|A_1|$ is the determinant of matrix A_1 which is constructed from matrix A by replacing the first column of A with matrix C. And the |A| is the determinant of matrix A.

The other demands ($x_2, x_3, \ldots x_n$) and λ can be found by applying equation (6) in the same way. From (6), we can find the Marshallian (uncompensated) demand function for commodity x_i as follows:

$$\mathbf{x_i} = \mathbf{x_i^o} + \frac{\boldsymbol{\alpha_i}\left(\mathbf{M} - \sum_{j=1}^{n} \mathbf{p_j x_j^o}\right)}{\mathbf{p_i} \sum_{i=1}^{n} \boldsymbol{\alpha_i}} \qquad \text{for all i and j} \quad \ldots\ldots\ldots\ldots\ldots\ldots(7a)$$

Where: $i \in (1,2,\ldots\ldots..n)$

$j \in (1,2,\ldots\ldots..n)$

Since a restriction that the sum of parameters α_i equals to one, $\sum_{i=1}^{n} \boldsymbol{\alpha_i} = 1$, is imposed equation (7a) becomes:

$$\mathbf{x_i} = \mathbf{x_i^o} + \frac{\boldsymbol{\alpha_i}\left(\mathbf{M} - \sum_{j=1}^{n} \mathbf{p_j x_j^o}\right)}{\mathbf{p_i}} \qquad \text{for all i and j} \quad \ldots\ldots\ldots\ldots\ldots\ldots(7b)$$

Equation (7) can be also reflected as the Linear Expenditure System as follows:

$$\mathbf{p_i x_i} = \mathbf{p_i x_i^o} + \boldsymbol{\alpha_i}\left(\mathbf{M} - \sum_{j=1}^{n} \mathbf{p_j x_j^o}\right) \qquad \text{for all i and j} \quad \ldots\ldots\ldots\ldots\ldots\ldots(8)$$

This equation system (8) can be interpreted as stating that expenditure on good i , given as p_ix_i, can be broken down into two components. The first part is the expenditure on a certain base amount x_i^o of good i , which is the minimum expenditure to which the consumer is committed (*subsistence expenditure*), $p_ix_i^o$ (Stone 1954). Samuelson (1948) interpreted x_i^o as a necessary set of goods resulting in an informal convention of viewing x_i^o as non-negative quantity. The restriction of x_i^o to be non-negative values however is unnecessarily strict. The utility function is still defined whenever: $\mathbf{x_i} - \mathbf{x_i^o} > 0$. Thus the interpretation of x_i^o as a *necessary level of consumption* is misleading (Pollak, 1968). The x_i^o allowed to be negative provides additional flexibility in allowing price-elastic goods.

The usefulness of this generality in price elasticity depends on the level of aggregation at which the system is treated. The broader the category of goods, the more probable it is that the category would be price elastic. Solari (in Howe 1954:13) interprets negativity of x_i^o as *superior* or *deluxe* commodities.

In order to preserve the committed quantity interpretation of the x_i^o's when some x_i^o are negative, Solari (1971) redefines the quantity $\sum_{j=1}^{n} p_j x_j^o$ as 'augmented supernumerary income' (in contrast to the usual interpretation as supernumerary income, regardless of the signs of the x_i^o). Then, defining n* such that all goods with $i \leq n^*$ have positive x_i^o and goods for $i > n^*$ are superior with negative x_i^o, Solari interprets $\sum_{j=1}^{n^*} p_j x_j^o$ as *supernumerary income* and $\sum_{j=n^*+1}^{n} p_j x_j^o$ as *fictitious income*. The sum of 'Solary-supernumerary income' and fictitious income equals augmented supernumerary income. Although somewhat convoluted, these redefinition allow the interpretation of 'Solari-supernumerary income' as expenditure in excess of the necessary to cover committed quantities.

The second part is a fraction α_i of the *supernumerary income*, defined as the income above the 'subsistence income' $\sum_{j=1}^{n} p_j x_j^o$ needed to purchase a base amount of all goods.

The α_i are scaled to sum to one to simplify the demand functions. The α_i is referred to as the *marginal budget share*, $\alpha_i / \sum \alpha_i$. It indicates the proportion in which the incremental income is allocated.

As stated above, the Linear Expenditure System (LES) satisfies the condition of:

(i) homogeneity of degree zero in prices

(ii) the budget constraint (Engel Aggregation and Cournot Aggregation conditions)

(iii)Slutsky conditions (negativity and symmetry conditions)

by construction. In combination with fourth i.e. the negative semi-definiteness of the Slutsky-Hicks substitution term matrix, they insure that the demand function in question is generated by the maximisation of utility function. Those conditions lead to some restrictions. First, the α_i's are positive which is incorporated in the specification of the utility function. Second, the sum of the marginal budget share is equal to one $\sum_{i=1}^{n} \alpha_i = 1$ that results in demand system of the form shown in equation (8). Third, inferior and complementary goods are not allowed. However, at the high level of aggregation employed in this study, this limitation (inferior and complementary) is not very restrictive. The higher the level of aggregation, the less likely it is that consumption of any given category would decline with the increase in income and some α_i's could be negative (Howe 1974:18).

The LES is widely used for three reasons. First, it has a straightforward and reasonable interpretation. Second, it satisfies the theory of demand (theoretical restrictions). Third, it can be derived from a specific utility function (the Stone-Geary or Klein-Rubin utility function) (Intriligator, Bodkin and Hsiao 1996:255).

Indirect Utility and Expenditure Function

The indirect utility function V(**P**,M) can be found by substituting the Marshallian demand x_i (equation 7b) into the utility function U(x_i) (equation 1). Therefore the indirect utility function is:

$$V(P,M) = \prod_{i=a}^{n}\left(\frac{\alpha_i\left(M-\sum_{j=1}^{n}p_j x_j^o\right)}{p_i}\right)^{\alpha_i} \qquad \text{for all i and j} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(9)$$

Equation (9) shows the household's utility function as a function of income and commodity prices. By inverting the indirect utility function the expenditure function E(**P**,U), which is a function of certain level of utility and commodity prices, can be expressed as follows:

$$E(P,U) = \frac{U}{\prod_{i=1}^{n}\left(\frac{\alpha_i}{p_i}\right)^{\alpha_i}} + \sum_{i=1}^{n} p_i x_i^o \qquad \text{for all i and j} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(10)$$

Hicksian Demand

By derivation the expenditure function E(**P**,U) with respect to a particular price (using the Shephard lemma), the Hicksian demand function can be represented as:

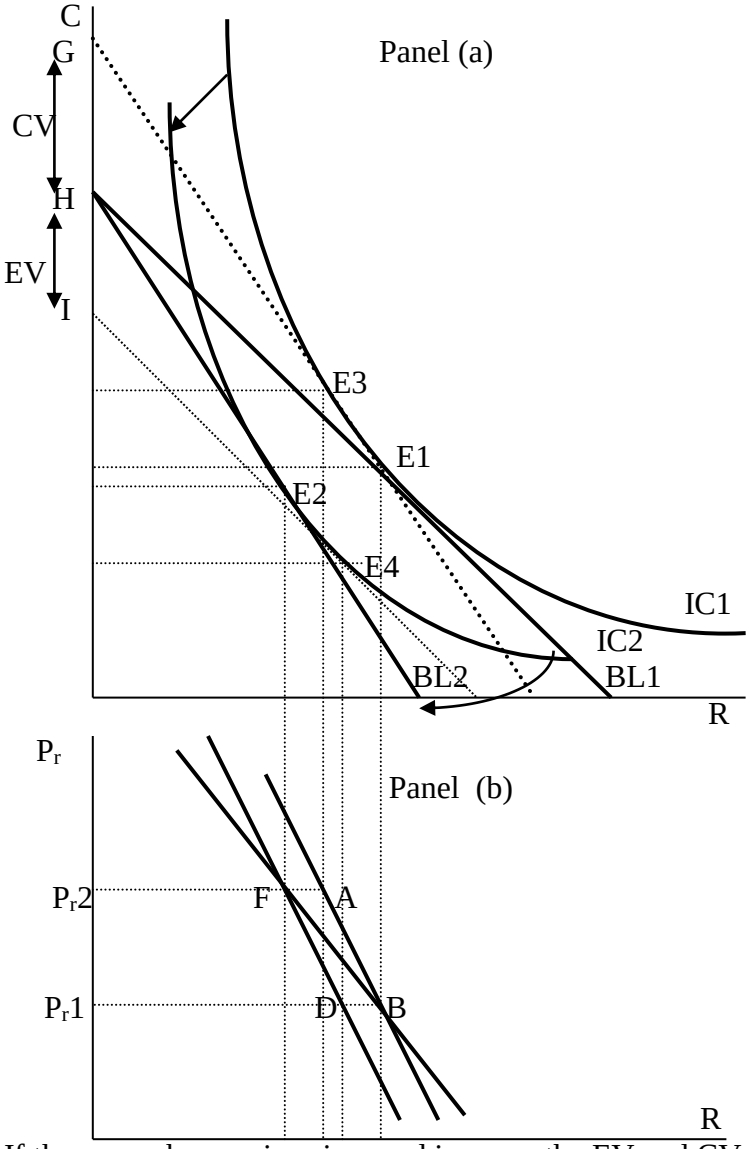
$$h_i = \frac{\partial E}{\partial p_i} = x_i^o - \frac{\alpha_i U p_i}{\prod_{i=1}^{n}\left(\frac{\alpha_i}{p_i}\right)^{\alpha_i}} \qquad \text{for all i} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(11)$$

3.2. Welfare Change

The economic crisis has brought some increases in food prices and decreases of the household's income. The Equivalent Variation (EV) and Compensation Variation (CV) will be applied to analyze the impact of the economic crisis on economic welfare.

The Equivalent Variation (EV) can be defined as the dollar amount that the household would be indifferent to in accepting the changes in food prices and income (wealth). It is the change in her/his wealth that would be equivalent to the prices and income change in term of its welfare impact (EV is negative if the prices and income changes would make the household worse off). Meanwhile, the Compensating Variation (CV) measures the net revenue of the planner who must compensate the household for the food prices and income changes, bringing the household back to its welfare (utility level) (Mas-Colell, A., Whinston, M.D. and Green, J.R., 1995:82). The CV is negative if the planner would have to pay household a positive level of compensation because the prices and income changes make household worse off). Figure 1 visualizes the EV and CV when there is only an increase in price of one good.

Figure 1. The Compensation Variation and Equivalent Variation



EV and CV. Suppose C is composite goods and R is rice. Consider a household has income M that is spent for Rice (R) and Composite goods (C) at price P_c and P_r1, respectively. The budget line is shown by BL1. Suppose there is an increase in price of rice from P_r1 to P_r2. Therefore, the budget line becomes BL2. The household's equilibrium moves from E1 to E2. It derives the Marshallian demand curve FB (panel b). To get the original utility IC1, the household should be compensated such that BL2 shifting until coincides with IC1 at E3. The compensating variation is represented by GH in panel (a) or area P_r2ABP_r1 (panel b). The equivalent variation is represented by HI in panel (a) or P_r2FDP_r1 (panel b).

If there are changes in prices and income, the EV and CV can be formulated as:

$$EV = E(p^{o}, U^{'}) - E(p^{'}, U^{'}) + (M^{'} - M^{o}) \quad \text{.....(12a)}$$

$$CV = E(p^{o}, U^{o}) - E(p^{'}, U^{o}) + (M^{'} - M^{o}) \quad \text{.....(13a)}$$

In the context of Linear Expenditure System (LES), equation (12a) and (13a) become:

$$EV = \left(\prod_{i=1}^{n} \left(\frac{p_i^{o}}{p_i^{'}} \right)^{\alpha_i} - 1 \right) M^{o} - \prod_{i=1}^{n} \left(\frac{p_i^{o}}{p_i^{'}} \right)^{\alpha_i} \sum_{i=1}^{n} p_i^{'} x_i^{o} + \sum_{i=1}^{n} p_i^{o} x_i^{o} + \left(M^{'} - M^{o} \right) \quad \text{.....(12b)}$$

$$CV = \left(1 - \prod_{i=1}^{n}\left(\frac{p_i^{'}}{p_i^{o}}\right)^{\alpha_i}\right) M^{o} - \sum_{i=1}^{n} p_i^{'} x_i^{o} + \prod_{i=1}^{n}\left(\frac{p_i^{'}}{p_i^{o}}\right)^{\alpha_i} \sum_{i=1}^{n} p_i^{o} x_i^{o} + \left(M^{'} - M^{o}\right) \quad \text{……..(13b)}$$

for all i and j

Where: P^o is food commodity prices pre-economic crisis vector

P' is food commodity prices post-economic crisis (during economic crisis) vector

p_i^o is food commodity i prices pre-economic crisis

$p_i^{'}$ is food commodity i prices post-economic crisis (during economic crisis)

U^0 is level of utility (welfare) pre-economic crisis

U' is level of utility (welfare) post-economic crisis (during economic crisis)

M^0 is income (expenditure) pre-economic crisis

$M^{'}$ is income (expenditure) post-economic crisis

By knowing the change in prices and income due to the economic crisis, we can find the change in welfare measured by CV and EV. The EV and CV indicate whether the household is worse off or better off under the economic crisis. This will answer the first question of this research i.e. how much the individual household should be compensated due to the economic crisis to hold the same utility (welfare). And by comparing the welfare change of the urban and rural individual households, we can answer the second question of which society, rural or urban, is most effected by the economic crisis.

The main shortcoming of this analysis is that it treats households only as consumers but not producers. In fact, the rural households are commonly producers of food. They are closely involved with the agriculture sector producing food. A rise in food prices (due to economic crisis) also benefits farmers (rural household) i.e. increase income. In contrast, urban households are more concentrated in the non-agriculture sector such as construction, banking, manufacturing, etc. that are not closely related with the food

production. A rise in food prices means the increase of the cost for food consumption for urban households but the increase of income for rural households.

The other shortcoming of the analysis is that the result will be strongly depends on the availability data on prices and income changes. In fact, the unavailability of those data has forced this research to impose some assumptions about the data. Therefore, the accuracy of the analysis will be closely related with the accuracy of assumptions about data. Nevertheless, it gives some possibilities to other researcher to make some other simulations.

IV. DATA AND ESTIMATION

Data

This research uses the secondary pooled data (time series and cross section data) about individual household's expenditure from *Statistik Harga Pedesaan* (Rural Price Statistics) and *Survey Biaya Hidup* (Survey of Living Cost) published by the Central Bureau of Statistics (*Badan Pusat Statistik*, BPS) Indonesia 1980, 1981, 1984, 1987, 1990, 1993 and 1996. The data used are consumption on foods, prices of foods, income (total expenditure) of household by rural and urban households by provinces. This research is based on ten food commodity-groups (see Appendix B for detail aggregation):

(1) Cereals (X1)
(2) Tubers (X2)
(3) Fish (X3)
(4) Meat(X4)
(5) Eggs and Milk (X5)
(6) Vegetables (X6)
(7) Nuts (X7)
(8) Fruits (X8)

(9) Prepared Foods (X9)
(10) Tobacco / Cigarette (X10)

The 26 provinces of Indonesia are grouped into 5 groups of region based on the geography i.e. Java and Bali; Sumatra; Kalimantan; Sulawesi; and the rest of Indonesia. Some problems faced about availability of data are overcome by interpolation. The details of the process of interpolation are presented in the Appendix A.

Estimation

The method be used is econometric by using the panel data. Computer program Shazam version 8 is applied for estimating the parameters. The estimation of a linear expenditure system (LES) shows certain complications because, while it is linear in the variables, it is non-linear in the parameters, involving the products of α_i and X_i^o in equation systems (7b) and (8). There are several approaches to estimation of the system (Intriligator, Baskin, Hsaio 1996). The first approach determines the base quantities X_i^o on the basis of extraneous information or prior judgement. The system (8) then implies that expenditure on each good in excess of base expenditure $(p_i x_i - p_i x_i^o)$ is a linear function of supernumerary income, so each of the marginal budget shares α_i can be estimated applying the usual single-equation simple linear regression methods.

The second approach reverses this procedure by determining the marginal budget shares α_i on the basis of extraneous information or prior judgements (or Engel curve studies, which estimate α_i from the relationship between expenditure and income). It then

estimates the base quantities x_i^o by estimating the system in which the expenditure less the marginal budget shares time income $\left(p_i x_i - \alpha_i x_i^o\right)$ is a linear function of all prices. The total sum of squared errors -over all goods as well all observations- is then minimized by choice of the x_i^o.

The third approach is an iterative one, by using an estimate of α_i conditional on the x_i^o (as in the first approach) and the estimates of the x_i^o conditional on α_i (as in the second approach) iteratively so as to minimize the total sum of squares. The process would continue, choosing α_i based on estimate x_i^o and choosing x_i^o based on the last estimated α_i, until convergence of the sum of squares is achieved.

The fourth approach selects α_i and x_i^o simultaneously by setting up a grid of possible values for the 2n-1 parameters (the –1 based on the fact that the α_i sum tends to unity, $\sum_{i=1}^{n} \alpha_i = 1$) and obtaining that point on the grid where the total sum of squares over all goods and all observations is minimized.

This research applies the fourth approach. The reason is that when estimating a system of equation seemingly unrelated regression (SUR), the estimation may be iterated. In this case, the initial estimation is done to estimate variance. A new set of residuals is generated and used to estimate a new variance-covariance matrix. The matrix is then used to compute a new set of parameter estimator. The iteration proceeds until the parameters converge or until the maximum number of iteration reached. When the random errors

follow a multivariate normal distribution these estimators will be the maximum likelihood estimators (Judge et al 1982:324).

Rewriting equation (8) to accommodate a sample t=1,2,3,…..T and 10 goods yields the following econometric non-linear system:

$$p_{1t}x_{1t} = p_{1t}x^{o}_{1t} + \alpha_1\left(M - \sum_{j=1}^{10} p_j x^{o}_j\right) + e_{1t}$$

$$p_{2t}x_{2t} = p_{2t}x^{o}_{2t} + \alpha_2\left(M - \sum_{j=1}^{10} p_j x^{o}_j\right) + e_{2t} \qquad \text{for all i and j} \quad \text{.....(14)}$$

.....

.....

$$p_{10t}x_{10t} = p_{10t}x^{o}_{10t} + \alpha_{10}\left(M - \sum_{j=1}^{10} p_j x^{o}_j\right) + e_{10t}$$

Where: e_{it} is error term equation (good) i at time t.

Given that the covariance matrix $E[e_t e_t'] = \xi$ where $e_t' = (e_{1t}, e_{2t}, \ldots\ldots\ldots e_{10t})$ and ξ is not diagonal matrix, this system can be viewed as a set of non-linear seemingly unrelated regression (SUR) equations. There is an added complication, however. Because $\sum_{i=1}^{10} p_{it}X_{it} = M$ the sum of the dependent variables is equal to one of the explanatory variables for all t, it can be shown that $(e_{1t} + e_{2t} + \ldots\ldots\ldots + e_{10t}) = 0$ and hence ξ is singular, leading to a breakdown in both estimation procedures. The problem is overcome by estimating only 9 of the ten equations, say the first nine, and using the constraint that $\sum_{i=1}^{10}\alpha_i = 1$, to obtain an estimate of the remaining coefficient α_{10} (Barten, 1977).

The first nine equations were estimated using the data and the maximum likelihood estimation procedure. The nature of the model provides some guide as to what might be

good starting values for an iterative algorithm[2]. Since the constraint the minimum observation of expenditure on good i at time t (x_{it}) greater than the minimum expenditure X_i^o should be satisfied, the minimum x_{it} observation seems a reasonable starting value for X_i^o in iteration process. Also the average budget share, $T^{-1}\sum_{t=1}^{T}\left(p_{it}x_{it}/M_t\right)$, is likely to be a good starting value for α_i in the iterating process (Griffith et al, 1982). It is because the estimates of the budget share α_i will not much differ with the average budget share. It will also reduce the memory requirement in Shazam program.

Table 3 represents the estimated parameters from linear expenditure equation system (14). The parameters have both negative and positive signs. The negative value of x_i^o seems to break the restriction that x_i^o should be positive because it reflects the minimum expenditure to which consumer is committed (*subsistence expenditure*), $P_ix_i^o$ (Stone 1954). In the same sense, Samuelson (1948) defines x_i^o as a necessary set of goods resulting in an informal convention of viewing x_i^o as a non-negative quantity. However, the restriction of x_i^o to be non-negative values, is unnecessarily strict because the utility function is still theoretically defined whenever $X_i - X_i^o > 0$ (Howe 1954:13). Thus the interpretation of x_i^o as a necessary level of consumption as being to some extent misleading (Pollak, 1968). The x_i^o is allowed to be negative provides additional flexibility in allowing price-elastic good[3]. The level of commodity aggregation could cause negative

[2] For a detailed explanation about iterative algorithms, see Griffith *et al* 1982.

[3] The expression for own-price elasticity: $\varepsilon_i = \frac{X_i^o}{X_i}(1-\alpha_i)-1$. When x_i^o is positive $\frac{X_i^o}{X_i} < 1$ by the requirement ($x_i - x_i^o$)>0. Since α_i >0 and $\sum_{i=1}^{10}\alpha_i = 1$ elasticity is less than one in absolute value. Only if x_i^o is negative, elasticity exceeds one in absolute value. Negative x_i^o also has consequences for price elasticities. With positive x_i^o the cross

x_i^o. Solary (in Howe 1954:13) interprets negativity of x_i^o as superior or deluxe commodities. Superior commodities can be ranked hierarchically with regard to $\frac{p_i|x_i^o|}{\alpha_i}$. When total expenditure increase, superior goods enter the consumption pattern in order of increasing $\frac{p_i|x_i^o|}{\alpha_i}$.

Table 3 also shows that there are some negative value of α_i . The negative α_i means that when there is an increase in income such that supernumerary income is negative $\left(M-\sum_{j=1}^{10} p_j x_j^0 \langle 0\right)$ the demand for good i will decrease. Also, if there is an increase in income such that supernumerary income is positive $\left(M-\sum_{j=1}^{10} p_j x_j^0 \rangle 0\right)$ the demand for good i will decrease. The negative value of α_i indicates that if there is an increase of income, the demand for good i will decrease (inferior good). Good i is an inferior good. Two properties of LES are that inferior and complementary are disallowed. Evaluation of the expression $\frac{\partial x_i}{\partial M}=\frac{\alpha_i}{p_i}$ reveals that, in the LES, the income elasticity is always positive, inferior goods are not allowed. Cross substitution matrix is positive with LES. However, at the high the level of aggregation employed in this study, this limitation is not restrictive. It would be possibly to find the negative α_i, when a research is related with the aggregation data. In fact, the goods could be normal or inferior good. Therefore, when

---

elasticity: is a negative (complement). With negative x_i^o , the elasticity is positive

$$\varepsilon_{ij}=\frac{\partial x_i / x_i}{\partial p_j / p_j}=-\frac{\alpha_i x_j^o}{x_i}\frac{p_j}{p_i}$$

(substitute).

we aggregate those goods the nature of the goods (normal or inferior) will appear in the aggregate data. The higher level of aggregation, the less likely it is that consumption of any given category would decline with an increase in income, negative α_i (Howe 1974:18).

Table 3. The Coefficients of Estimate Demand

	Indonesia		Java+Bali		Sumatra		Kalimantan		Sulawesi		Rest	
Coeff.	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
x_1^o	6.4476	8.7832	9.4896	9.919	9.334	6.4451	6.292	7.7184	10.311	12	7.8023	6.0646
x_2^o	12.1800	12.4510	10.064	11.65	1.506	12.7470	7.044	2.4665	6.306	14.576	13.111	1.3003
x_3^o	0.3976	0.8447	1.2227	0.423	0.374	0.2475	0.336	0.4104	0.635	-1.669	0.268	1.5955
x_4^o	0.8382	0.8240	0.4932	0.202	0.85	1.0505	2.303	1.9606	1.31	0.773	1.068	1.2870
x_5^o	0.3293	0.1487	0.3354	0.149	0.25	0.1087	0.189	0.1319	0.247	0.128	0.372	0.2475
x_6^o	1.8147	1.0872	1.9147	0.833	2.772	1.0393	4.564	1.3389	2.292	0.9799	1.64	0.6281
x_7^o	1.1915	1.1464	1.0681	1.068	0.213	1.5027	0.885	0.4953	1.0233	0.835	1.269	1.1527
x_8^o	0.7531	0.5635	1.1469	0.692	0.595	0.2335	0.333	0.2203	0.3509	0.253	1.024	0.4671
x_9^o	0.9827	1.4060	1.3183	1.386	0.378	1.7398	2.167	1.6802	1.245	1.243	1.425	2.8246
x_{10}^o	-3.3644	-0.6972	-2.2745	-2.215	-0.186	-1.7062	-0.301	-0.3854	-1.967	-1.139	-1.349	-1.8863
α_1	-0.1909	-0.2477	-0.2281	-0.238	-1.363	-0.3199	-0.24	-1.0263	-0.7228	-0.2473	-0.355	-1.0631
α_2	0.1086	-0.0651	-0.0778	-0.068	-3.3	-0.1529	-0.209	-2.2502	-0.89	0.0157	0.0083	-0.1160
α_3	-0.0259	-0.0466	-0.0053	-0.042	-0.16	-0.0495	-0.031	-0.0809	-0.035	-0.171	-0.059	-1.4542
α_4	-0.0072	0.0010	-0.0016	-0.0088	-0.00034	0.0001	0.0004	0.0084	-0.00012	-0.0031	0.00004	0.1013
α_5	0.0040	-0.0005	-0.0012	-0.0013	0.003	-0.0007	-0.0035	-0.0252	-0.0026	-0.002	0.0017	0.2422
α_6	-0.0157	-0.0016	-0.0017	0.364	-0.00005	-0.0002	0.002	-0.0557	-0.00022	0.00131	-0.00047	-0.7270
α_7	-0.0061	-0.0087	-0.0184	-0.0096	-0.686	-0.0032	-0.0026	-0.1169	-0.016	0.00418	-0.019	-0.7815
α_8	0.0092	0.0135	0.0254	-0.0086	0.026	-0.0066	-0.017	-0.0040	-0.0099	0.00786	0.034	-0.0250
α_9	-0.0218	0.0017	0.0039	0.0187	-0.31	0.0098	-0.0078	-0.0746	0.011	0.00568	0.0025	-1.2157
α_{10}	1.1458	1.3542	1.3049	1.354	6.79	1.5232	1.509	4.6254	2.666	1.396	1.387	6.0391

Source: *Statistik Harga Pedesaan* (Rural Price Statistic) and *Survey Biaya Hidup* (Survey of Living Cost), BPS, *calculated*.
Note: Statistical analysis is provided in Appendix C

Based on these α_i and x_i^o interpretations, in general tobacco/cigarette (x_{10}) is *superior* or *deluxe* (price-elastic) commodity in both rural and urban Indonesia, whereas the other commodity groups are price-inelastic goods, except fish (x3) that is also a price-elastic good for rural households in Sulawesi. It is shown by negative x_{10}^o for all regions and negative x_3^o for rural Sulawesi respectively. Since food is a basic good (basic needs or necessity good), it is theoretically believed that food would be inelastic. A household's

demand for food would be very irresponsive to the change in food prices. Tobacco/cigarette has a positive *marginal budget share*, estimate α_{10} positive. It clearly means that when a household's income increases the demand for tobacco/cigarette (x_{10}) also increases. The strange result is found in rural Sulawesi where fish (x_3) is a price-elastic good but has a negative marginal budget share. It means that fish (x_3) is a price-elastic and inferior good for rural household Sulawesi.

From the structure of food consumption, in general a rural household's minimum consumption of cereals (x1), tubers (x2), fish (x3) is relatively much more than urban household's one. In contrast, urban household's minimum consumption of meat (x4), egg and milk (x5), vegetables (x6) and prepared foods (x9) is relatively higher than for a rural household. However, the urban and rural households have relatively the same minimum consumption of nuts (x7) and fruits (x8).

Why do some of these coefficients differ from staples across region ad rural-urban areas? The deep research is needed to answer this question. Some general factors could be addressed in explaining the difference. Elaine (1999) notes that there are 5 factors affecting food decisions made by individual consumers i.e. food availability, cultural factors, psychological factors, lifestyle factors and food trends.

First, food availability is the crucial factor in determining food consumption. It is obvious that households will consume relatively more a kind of food that is abundant in that area. *Second*, food habits are culture factors that make an important contribution to

the food decisions consumers make. Although some view and food habits as unchanging and static, it is now known that they are continually changing as they assimilate to immigration, travel and socio-economic environment (Jerome, 1982; Lowenberg et al., 1974: Senauer et al., 1991; Kittler and Sucher, 1995). However, there are certain elements of food habits that might be difficult to change, such as the concept of meals, meal patterns, the number of meals eaten in a day, when to eat what during the day, how food is acquire and prepared, the etiquette of eating and what is considered edible as food (Elaine, H. 1999:288).

Third, psychological factors consist of food preferences, food likes and dislikes and response to sensory attributes. Food preferences play a key role in food selection because they give an indication of the amount of satisfaction an individual anticipates from eating a food. Food preference is a result of physiological and psychological development and social experiences, and is related to degree of liking a food (Elaine, H. 1999:289). Liked foods are those that are familiar, considered pleasant, and are usually the ones eaten, thus food preference predict consumption. In contrast, disliked foods are rejected either because they are considered unpleasant or they are unfamiliar foods that have never been tasted.

Fourth, lifestyle factors. Lifestyles describe how people seek to express their identity in many areas, including food selection. *Fifth*, food trends. Several established and emerging food trends identified by Sloan (1994, 1996, and 1998) affect the food decisions individual make. These include foods that are fresh; quick to cook; ethnic with

distinctive ingredients, favor and spices; fusion foods (the combine ethnic cuisines); less meat; more vegetarian meals; labelled natural organic; available in a variety of places; health promote; and physical performance-enhancing energy foods.

Some Basic Setting

The economic crisis happened since 1996 has caused some increases in price of foods and decrease in income. This research will use some figures from the previous other researches and surveys. Two settings based on those can be withdrawn. *First*, in this study the increase of prices (inflation) from the BPS and also the inflation level suggested by IFLS (Indonesia Family Life Survey) will be used i.e. inflation per province inflated from the BPS by 14% for urban and 16% for rural. This research assumes that the inflation rate per province reflects the food inflation rate in that province. This assumption is taken because the data of inflation rate of each commodity groups per province is unavailable. Therefore, the shortcoming of this assumption is that all commodity groups are treated to have same inflation rate. However, this shortcoming can be avoided if the data inflation rate of each commodity group per province can be reached. It gives opportunities readers/researchers to do some simulation based on the available data.

Table 4 represents the calculated unweighted average food inflation rate in each considered region[4]. The second column consists of the average inflation rate for each

[4] The unweighted average inflation rate per province is calculated by applying formula as follows: $\pi_i = \frac{\sum_{j=1}^{n} \mu_j}{n}$ where π_i is the unweighted average inflation in region i, μ_i is inflation in province j and n is the number of provinces in region i.

region calculated from taking the average of inflation in all provinces published by the BPS. For example, according to BPS the food prices increase by 76.04% during 1996-1998 period. Unfortunately, the BPS does not distinguish the inflation rate in urban and rural areas. Therefore, it is assumed that rural and urban areas have the same inflation rate in this study in one part. In fact, urban and rural have obviously different rates of inflation. The IFLS data suggests that inflation between the rounds of the survey has been about 15% higher than the rate estimated from BPS data (Frankenberg, Thomas, Beegle 1999:14) and therefore IFLS suggests to inflate the BPS inflation by 14% for urban and 16% for rural household. The third and fourth columns of Table 4 represent urban and rural average inflation rates respectively suggested by the IFLS for each region. These inflation rates (BPS and IFLS) will be used to inflate the prices, therefore the prices pre-crisis and post-crisis can be withdrawn.

Table 4. The Average Food Inflation Rate (% per annum), 1996-1998

Region	BPS	IFLS-Urban	IFLS-Rural
Indonesia	76.04	90.04	92.04
Java+Bali	72.34	86.34	88.34
Sumatra	81.31	95.31	97.31
Kalimantan	71.00	85.00	87.00
Sulawesi	75.60	89.60	91.60
Rest	79.93	93.93	95.93

Source: Frankenberg, Thomas and Beegle 1999, calculated (average groups)

Second, it is a fact that a household's income decreases due to economic crisis. Some people might argue that there are some households have had an increase in income due to the crisis. Rupiah depreciation (due to the economic crisis) might increase some households' income because they produce exportable goods like furniture (Jepara, Central Java) or shrimp (Makasar, Sulawesi) for example. But it is commonly believed that benefit is only gained by a relatively small number of households and in general households' income has decreased due to the economic crisis. Following IFLS

suggestions, it is assumed that the decrease of income is -33% for urban and –21% for rural household. We also consider the decrease of income –23% for urban and the increase of income 5% for rural based on BPS calculation. A more optimistic assumption, i.e. urban household's income remains constant and rural household's income increases by half of food price inflation rate, is also applied. This optimistic assumption is withdrawn from facts that urban households try to keep the income constant by working more in informal sectors and rural household income increase when the agriculture price increases (Sumarto, Wetterberg and Pritchett 1999:13). It is also supported by remarkable flexibility of Indonesian labour markets and the capacity of people to find new jobs after being retrenched from wage employment (Manning 1999:121).

Table 5 summarizes the settings to be implemented in this study, i.e. scenario I (IFLS), scenario II (BPS) and scenario III (optimistic). It is apparent that the impact of economic crisis on rural and urban welfare would be overvalued under scenario I (IFLS) than under scenario II (BPS) or scenario III (optimistic), because scenario I has relatively higher inflation and higher decrease in income than scenario II or III.

Table 5. Some Basic Settings

Scenario I (IFLS)	Scenario II (BPS)	Scenario III (Optimistic)
Inflation: urban : BPS + 14% and rural + 16% **Income**: -33% for urban and -21% for rural	**Inflation**: urban and rural have the same inflation level (BPS) **Income**: -23% for urban and 5% for rural	**Inflation**: urban and rural have the same BPS inflation level **Income**: constant for urban, increase by 1/2 inflation level for rural

Source: Frankenberg, Thomas and Beegle 1999, *calculated* (average groups)

V. WELFARE EFFECT OF ECONOMIC CRISIS

Based on the previous settings, scenario I (IFLS), scenario II (BPS) and scenario III (Optimistic), the welfare effect of the economic crisis can be elaborated by applying Equivalent Variation (EV) and Compensating Variation (CV) concepts developed in part

3. In this section we will analyse the impact of economic crisis on the minimum expenditure, rural-urban households' welfare and 'poorest' urban-rural households' welfare.

Minimum expenditure

In part 3, it is stated that x_i^o represents the minimum good consumed by household and $p_i x_i^o$ the minimum expenditure to which the household is committed (subsistence expenditure) (Stone 1954). It is assumed that household preferences do not change due to the economic crisis. This assumption is used for convenience in the analysis although it seems to be little bit unrealistic. May be in fact, the household preference changes in order to adjust to economic crisis (socio-economic environment), immigration and travel (Jerome, 1982; Lowenberg et al., 1974: Senauer et al., 1991; Kittler and Sucher, 1995). In practice we know that there is a lot of substitution even for food. However, as long as x_i^o represents the minimum good consumed (subsistence level) it is theoretically believed that these minimum amounts of goods might not much change because it is for keeping alive (Elaine 1999).

By assuming unchanged household preferences, the change of minimum expenditure can easily found by multiplying the minimum good i by its own price and then summing up them. But, it is important to note that the commodity group that having negative estimation of x_i^o has to be excluded because the household utility certainly will be defined although the household does not consume that commodity. From Table 3 above, it is obvious that tobacco/cigarette (x10) is excluded in calculating the minimum

expenditure for all regions and fish (x3) is also excluded for rural Sulawesi. They have negative estimation of x_{10}^o and x_3^o respectively which does not reflect minimum requirement of good i to be consumed.

Table 6 represents the change of minimum expenditure pre-crisis (1996) and post-crisis (1998) based on IFLS and BPS inflation level. The minimum expenditure (subsistence expenditure) has increased dramatically from pre-crisis to post crisis. Based on IFLS inflation level, it increased by more than 85% both in rural and urban areas in all regions. It means that in post crisis households must spend more than 85% of their money to get the same minimum subsistence amount of food pre-crisis. The percentage change of subsistence expenditure is relatively not much different between rural and urban, i.e. above 85%. Although the percentage change in the minimum expenditure is almost the same within urban and rural areas, the nominal change of the minimum expenditure in urban areas is relatively much higher than in rural areas. For example, the minimum expenditure was Rp 25,763 in urban area and Rp 24,454 in rural area under IFLS inflation. This might become one reason of de-urbanization. Therefore, the decline in employment in urban (Frankeberg, Thomas and Beegle 1999:31) is not the only one strong reason of de-urbanization but also the minimum cost of living in urban area are relatively higher than urban area.

Table 6. Minimum Expenditure on Food (Rp/household/month)

Regions	Indonesia	Java+Bali	Sumatra	Kalimantan	Sulawesi	Rest
URBAN						
1. (before crisis) 1996	28,721	24,561	26,632	65,657	32,207	28,730
2. (after crisis IFLS adj) 1998	54,483	45,767	52,014	121,466	61,064	55,716
3. (after crisis BPS) 1998	50,463	42,329	48,286	112,274	56,555	51,694
CHANGE1 (2-1)	25,763	21,206	25,383	55,809	28,857	26,986
CHANGE 2 (3-1)	21,742	17,768	21,654	46,617	24,348	22,964

RURAL						
4. (before crisis) 1996	26,656	15,219	25,143	40,417	23,488	26,392
5. (after crisis IFLS adj) 1998	51,110	28,664	49,609	75,580	45,003	51,710
6. (after crisis BPS) 1998	46,845	26,229	45,586	69,114	41,245	47,488
CHANGE 3 5-4)	24,454	13,445	24,466	35,163	21,515	25,318
CHANGE 4 (6-4)	20,189	11,010	20,444	28,696	17,757	21,095

Source: *Statistik Harga Pedesaan* (Rural Price Statistic) and *Survey Biaya Hidup* (Survey of Living Cost), BPS, *calculated.*
Frankenberg, Thomas and Beegle (1999), calculated.

The increase in minimum (subsistence) expenditure closely relates with the increase in poverty line. This percentage change in subsistence expenditure is almost parallel with the increase in the number of poor people (under poverty line) suggested by IFLS. This result supports IFLS saying that estimate that incorporate province-specific inflation (based on BPS price data from 44 urban areas) suggest that overall, the proportion of households below the poverty line has risen by about 25% with the larger increase in urban than in the rural areas. Estimate allow for higher overall inflation and higher inflation in rural than urban areas (as indicated by the price data collected in the IFLS communities) suggest that the rise in poverty is considerably larger- around 80%- and that rural household have experienced more change than urban household. Table 6 shows that based on IFLS inflation level the increase of subsistence expenditure in rural area is higher than urban areas.

In nominal Rupiah, Kalimantan has the highest increase in minimum expenditure i.e Rp 55,809 for urban and Rp 35,163 for rural based on IHLS inflation. This might happen because rural and urban households in Kalimantan consume relatively much more meat (x4) and vegetables (x6), which could be expensive after the economic crisis. Interestingly, Java has the lowest increase in minimum expenditure i.e Rp 21,206 for

urban and Rp 13,445 for rural based on IFLS inflation level. This number is lower than for Indonesia which has Rp 28,612, for urban and Rp 24,454 for rural areas.

Welfare impact: Urban versus Rural

From above assumptions about increase in food prices (inflation) and decrease in income i.e. scenario I (IFLS), scenario II (BPS) and scenario III (Optimistic), the calculated absolute welfare impact of the economic crisis in term EV and CV for 1986-1998 are presented in Table 7. The Equivalent Variation (EV) can be interpreted as the dollar amount that the household would be indifferent about accepting the change in price and income (wealth). The compensating variation (CV) measures the net revenue of the planner who must compensate the household for the price and income change, bringing the household back to its welfare (utility level). The negative value of EV and CV indicate that the economic crisis has made both urban and rural households worse off. Table 7 exhibits the total absolute welfare change and the monthly average of absolute welfare change during 1996-1998. In general, the economic crisis has decreased the economic welfare of urban and rural household. There is no household in both rural and urban areas are benefited by the crisis in term of welfare created by food consumption. It is shown by negative EV and CV for all regions.

Table 7. The Absolute Welfare Change Measured by CV, EV (Rp/household), 1996-1998

Region		Total Welfare Change						Monthly Average Welfare Change					
		IFLS Adjusted		BPS		Optimistic		IFLS Adjusted		BPS		Optimistic	
		EV	CV	EV	CV	EV	CV	EV	CV	EV	CV	EV	CV
		1	2	3	4	5	6	7	8	9	10	11	12
Indonesia	Urban	-47,306	-116,703	-40,259	-92,406	-25,163	-77,310	-1,971	-4,863	-1,677	-3,850	-1,048	-3,221
	Rural	-27,262	-75,137	-14,229	-48,913	-7,435	-42,118	-1,136	-3,131	-593	-2,038	-310	-1,755
Java+Bali	Urban	-45,562	-109,065	-38,611	-85,756	-23,926	-71,071	-1,898	-4,544	-1,609	-3,573	-997	-2,961
	Rural	-23,104	-88,664	-11,276	-57,776	-5,176	-51,676	-963	-3,694	-470	-2,407	-216	-2,153
Sumatra	Urban	-47,945	-125,148	-41,024	-100,189	-25,884	-85,049	-1,998	-5,215	-1,709	-4,175	-1,078	-3,544
	Rural	-27,343	-79,877	-14,497	-53,385	-7,067	-45,956	-1,139	-3,328	-604	-2,224	-294	-1,915
Kalimantan	Urban	-56,674	-133,899	-47,950	-104,974	-29,613	-86,637	-2,361	-5,579	-1,998	-4,374	-1,234	-3,610
	Rural	-33,227	-87,578	-16,935	-55,532	-9,237	-47,834	-1,384	-3,649	-706	-2,314	-385	-1,993
Sulawesi	Urban	-40,634	-100,449	-34,565	-79,526	-21,566	-66,527	-1,693	-4,185	-1,440	-3,314	-899	-2,772
	Rural	-24,183	-67,240	-12,535	-43,731	-6,472	-37,668	-1,008	-2,802	-522	-1,822	-270	-1,570
Rest	Urban	-45,202	-116,492	-38,625	-93,017	-24,307	-78,699	-1,883	-4,854	-1,609	-3,876	-1,013	-3,279
	Rural	-25,076	-72,280	-13,232	-48,002	-6,551	-41,321	-1,045	-3,012	-551	-2,000	-273	-1,722

Source: *Statistik Harga Pedesaan* (Rural Price Statistic) *Survey Biaya Hidup* (Survey of Living Cost), BPS, and Frankenberg, Thomas and Beegle (1999), *calculated*.

During the period 1996-1998 under scenario I (IFLS), the urban households (Indonesia) have been willing to pay Rp 47,306 (Rp 1,971 per month) to avoid increases in food prices and decreases in income due to the economic crisis to maintain the same level of utility (welfare). Or, the urban households (Indonesia) should be compensated by Rp 116,703 (Rp 4,863 per month) to maintain their utility (welfare) post crisis at the pre-crisis level. Under scenario II (BPS), these welfare changes are estimated to be smaller i.e Rp 40,259 (Rp 1,677 per month) and Rp 92,406 (Rp 3,850 per month) for EV and CV respectively, for urban household (Indonesia). The same interpretation can also be given for rural household and the other regions. Optimistic scenario (III) gives smaller absolute decrease in welfare than scenario II or I.

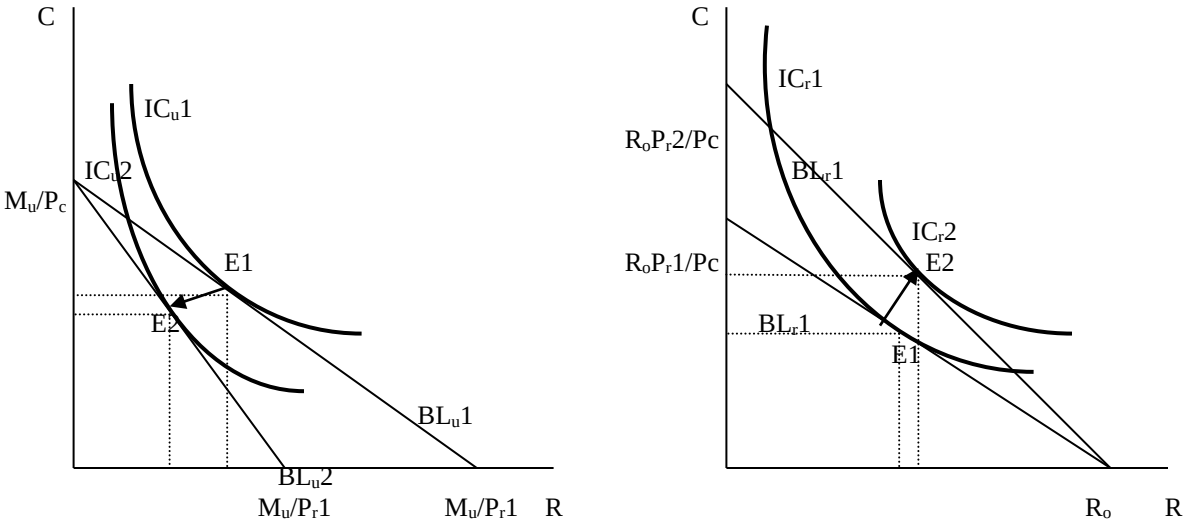
One important issue, which can be faced, is that urban households are hit more than rural households in all regions is. Within same regions, urban households should be

compensated about 30% more than the rural households should. This shows that although the rural inflation rate higher than the urban, decrease in rural income is not much higher than in urban areas. Why are urban households hit more than rural households? Deeper research is needed to answer this question. But there might be some possible early explanations indicating this situation, such as: food consumption structure and urban modern sector versus rural society agriculture sector (food sector); high unemployment level in urban areas (decrease in wage) and monetary level of society.

First, it is stated above that in the structure of food consumption, in general, a rural household's minimum consumption on cereals (x1), tubers (x2), fish (x3) are relatively much more than an urban household's. In contrast, an urban household's minimum consumption on meat (x4), egg and milk (x5) and vegetables (x6) is relatively higher than a rural household's. It is fact rural households produce foods, therefore when the prices of food increase, the rural household's food consumption is relatively unaffected. It has already produced by itself especially, cereals (x1), tubers (x2) and nuts (x7), vegetables (x6). The characteristic of rural areas is agriculture activities that are closely involved with the food production. It makes the increase of food prices not impact much on the rural household's food fulfilment. In contrast, the urban households are concentrated in non-food sectors like property, construction, banking, manufacture, etc. Therefore, when the food prices increase their purchasing power parities decrease relatively. Since this research focused on food consumption, the rural households which produce food by themselves would not be hit as harder by economic crisis as the urban households would. This is covered in the scenario III (optimistic) and explained in Figure 2.

Figure 2. The impact of increase in food prices on Rural and Urban Households' Budget Constraint

(a) Rural Household **(b) Urban Household**



Impact of increase in food prices.

Suppose C is composite goods, R is rice.

Consider an urban household has income M_u that is spent for Rice (R) and Composite goods (C) at price P_c and P_r1. The budget line is shown by BL_u1. Suppose there is an increase in price of rice P_r2. Therefore, the budget line becomes BL_u2. The maximum composite good remains M_u/P_c but the maximum rice decreases from M_u/P_r1 to M_u/P_r1. The utility decreases from IC_u1 to IC_u2.

Consider a rural household has certain amount of rice R_o instead of income. That amount of rice R_o can be sold or consumed. At price level of composite and rice P_c and P_r1, the budget line is shown by BL_r1. Suppose there is an increase in price of rice P_r2. Therefore, the budget line becomes BL_r2. The maximum the rice remains R_o but the maximum composite goods increases from R_oP_r1/Pc to R_oP_r2/Pc. The utility level increases from IC_r1 to ICr2

Second, increase in unemployment rate in urban areas and the increase in food prices also tend to decrease the purchasing power of urban areas. There has been a very large decrease in the median wage of all workers –between 20% and 30% depending on the inflation estimate used (Frankenberg, Thomas and Beegle 1999: 33). Table 8 shows that the decrease of wage (for males and females) in urban areas is greater than in rural areas. It is clear that the decrease in male and female median real wage in urban is larger than rural areas i.e. –26% for urban males, –16% for rural males, -22% for urban females and –3% for rural females based on BPS inflation estimate. This decrease becomes larger when IFLS inflation estimate is used. *Third*, the monetary level in urban is higher than

rural areas. It means that in urban areas all things are always valued in money, therefore the urban household must expend money for food fulfilment. It is unlike rural areas where the neighbors can help each other without payment.

Table 8. Median Real Hourly Wages Among Self-employed and Employees

	Male			Female		
	1997	**1998 (BPS inflation)**	**1998 (IFLS inflation)**	**1997**	**1998 (BPS inflation)**	**1998 (IF:S inflation)**
1. Median wages	698	572	497	416	330	287
Median change in wage		-147	-195		-46	-84
(%)		-21%	-28%		-11%	-20%
2. Urban sector median wages	962	780	679	641	474	412
Median change in wage		-250	-341		-141	-161
(%)		-26%	-35		22%	-25%
3. Rural sector median wages	481	470	409	275	257	224
Median change in wage		-79	-138		-8	-25
(%)		-16%	27%		3%	-9%

Source: Frankenberg, Thomas and Beegle (1999)

The other important issue when comparing among regions, is that both urban and rural households in Kalimantan are hit more seriously than households in the other regions. During the period 1996-1998, to maintain welfare pre-crisis level, the urban household should be compensated Rp 133,899 (Rp 5,579 per month) and the rural household should be compensated Rp 87,578 (Rp 3,649 per month) based on scenario I (IFLS) whereas Rp 104,974 (Rp 4,374 per month) and Rp 55,532 (Rp 2,314 per month) respectively are based on scenario II (BPS). This seems to contradict Sumarto, Etterberg and Pritchett's survey conclusion (1999) saying that Java is hard hit due most likely to a high degree of integration between urban and rural areas and Sumatra, and Maluku have experienced minimal negative crisis impact. But it is important to note that this study has different methodology in looking at the welfare. This study strongly focuses on food consumption

whereas Sumarto, Etterberg and Pritchet's survey was more qualitative and based broadly on interviews.

Table 9. The Welfare Change Measured by CV, EV Relative to Total Food Expenditure before Crisis (%), 1996-1998

Region		Total Welfare Cahnge						Monthly Average Welfare Change					
		IFLS Adjusted		BPS		Optimistic		IFLS Adjusted		BPS		Optimistic	
		EV	CV	EV	CV	EV	CV	EV	CV	EV	CV	EV	CV
		1	2	3	4	5	6	7	8	9	10	11	12
Indonesia	Urban	-128	-315	-109	-249	-68	-208	-5.3	-13.1	-4.5	-10.4	-2.8	-8.7
	Rural	-111	-306	-58	-199	-30	-171	-4.6	-12.7	-2.4	-8.3	-1.3	-7.1
Java+Bali	Urban	-126	-302	-107	-238	-66	-197	-5.3	-12.6	-4.5	-9.9	-2.8	-8.2
	Rural	-98	-377	-48	-245	-22	-220	-4.1	-15.7	-2.0	-10.2	-0.9	-9.1
Sumatra	Urban	-129	-337	-110	-269	-70	-229	-5.4	-14.0	-4.6	-11.2	-2.9	-9.5
	Rural	-112	-327	-59	-218	-29	-188	-4.7	-13.6	-2.5	-9.1	-1.2	-7.8
Kalimantan	Urban	-126	-297	-106	-233	-66	-192	-5.2	-12.4	-4.4	-9.7	-2.7	-8.0
	Rural	-109	-287	-56	-182	-30	-157	-4.5	-12.0	-2.3	-7.6	-1.3	-6.5
Sulawesi	Urban	-127	-315	-108	-249	-68	-208	-5.3	-13.1	-4.5	-10.4	-2.8	-8.7
	Rural	-110	-306	-57	-199	-29	-171	-4.6	-12.7	-2.4	-8.3	-1.2	-7.1
Rest	Urban	-129	-331	-110	-264	-69	-224	-5.4	-13.8	-4.6	-11.0	-2.9	-9.3
	Rural	-112	-321	-59	-213	-29	-184	-4.6	-13.4	-2.5	-8.9	-1.2	-7.7

Source: *Statistik Harga Pedesaan* (Rural Price Statistic) *Survey Biaya Hidup* (Survey of Living Cost), BPS, and Frankenberg, Thomas and Beegle (1999), *calculated*.

Table 9 represents the total welfare change and the monthly average of welfare change relative to household's total food expenditure pre-crisis. From columns (2), (4), (6), it is clear that urban and rural household have to be compensated (CV) about three times, two and half times, double of their total food expenditure pre-crisis based on scenario I, II and III respectively. As stated in the previous paragraph that Kalimantan has to get highest compensation in absolute term (Table 7), but Kalimantan has the lowest compensation in relative to total food expenditure before the crisis (Table 8). It happens because Kalimantan has relatively much higher total food expenditure pre-crisis than the other regions. It is interesting to note that although compensation needed for urban Java+Bali is greater than for rural Java+Bali in absolute term, it is less for urban Java+Bali than rural Java+Bali in relative to total food expenditure.

Welfare Impact to the 'Poorest' household

Who is the poor? The answers to this question are still debatable. There were at least three definitions in most highly publicized research. The first one was the official measurement from the Indonesian Central Bureau of Statistics (*Badan Pusat Statistik*, BPS). Table 10 shows the measurement of the poverty line published by the BPS. The second was a measurement proposed by the International Labor Organization (ILO) and the United Nations Development Program (UNDP). The third measurement was published by the World Bank, SMERU – a nongovernmental organization funded by the World Bank – and a joint study by RAND Graduate School and Demographic Institute, Faculty of Economics, University of Indonesia.

Table 10. BPS Poverty Line and Reference Population, 1993-1999 (Rp/capita/month)

Year	Urban		Rural	
	Poverty line	Reference pop.	Poverty line	Reference pop.
1993	27,905	30,000 – 40,000	18,244	20,000 – 30,000
1996	38,246	40,000 – 60,000	27,413	30,000 – 40,000
1998	96,959	80,000 – 100,000	72,780	60,000 – 80,000
1999	98,273	80,000 – 100,000	75,613	60,000 – 80,000

Source: Sutanto et al. (1999)

In this research, the unit of the research is a household. Therefore, the three previous definitions (BPS, ILO and World Bank) about the poverty line are irrelevant. The *subsistence* (minimum) expenditure can be used to define the 'poorest' household. Table 11 shows the 'household poverty line' defined from this research for 1980-1998. These figures are derived from multiplication of estimated minimum consumption (x_i^o) (from Table 3) by their prices so that we get the total minimum (*subsistence*) expenditure for food as 'household poverty line'. The shortcoming of this 'household poverty line' is that it does not consider the characteristics of household such as ages, number of people in a household, etc. One household spending money on food much more than another

household because the number of people in that household is larger than the number of people in the other. This is the shortcoming of the aggregate measurement, unlike the 'poverty line' that is based on income per-capita. Therefore, to overcome this shortcoming this research also considers household income in determining 'poorest' household. This research defines 'poorest' households as households that have total food expenditure observed less than *subsistence* (minimum) expenditure ('household poverty line') and considered in the lowest income group.

Table 11. The 'Household Poverty Line' (Rp/household/month)

Region	Indonesia	Java+Bali	Sumatra	Kalimantan	Sulawesi	Rest
URBAN						
1980	11,625	6,639	13,223	17,513	8,540	8,243
1981	12,246	7,293	13,586	19,005	9,004	8,781
1984	14,322	9,434	14,938	23,311	11,008	10,406
1987	17,212	12,408	16,710	29,288	13,921	12,516
1990	21,105	16,172	19,243	36,895	18,002	15,463
1993	25,939	20,162	21,736	48,899	23,034	20,210
(before crisis) 1996	31,884	24,561	26,632	65,657	32,207	28,730
(after crisis IFLS adj) 1998	60,495	45,767	52,014	121,466	61,064	55,716
(after crisis BPS) 1998	56,032	42,329	48,286	112,274	56,555	51,694
RURAL						
1980	10,305	4,179	12,494	15,327	6,096	7,161
1981	10,839	4,567	12,852	16,518	6,515	7,629
1984	12,648	5,896	14,025	20,522	7,974	9,181
1987	15,169	7,784	15,548	26,000	10,110	11,232
1990	18,588	10,288	17,784	32,848	13,213	13,950
1993	22,708	12,664	19,999	43,862	17,016	18,399
(before crisis) 1996	26,656	15,219	22,958	56,601	23,488	26,392
(after crisis IFLS adj) 1998	51,110	28,664	45,299	105,844	45,003	51,710
(after crisis BPS) 1998	46,845	26,229	41,626	96,788	41,245	47,488

Source: *Statistik Harga Pedesaan* (Rural Price Statistic) *Survey Biaya Hidup* (Survey of Living Cost), BPS, calculated.

For example, for Java+Bali the urban households which have total food expenditure less than Rp 25,939 per month and considered in the lowest income group are categorized as the 'poorest' urban household in 1993 in this research. Similarly, the rural households which have total food expenditure less than Rp 22,708 per month and considered in the

lowest income group are categorized as the 'poorest' rural households in 1993. Due to the latest availability data of household expenditure on food being in 1993, this research will use the household's 'poverty line' in 1993. From Table 11, it is clear that the 'household poverty line', for urban is higher than rural households.

By using 1993 data, we calculate the impact of the crisis on the 'poorest' households. First, we again estimate the demand system (equation 14) for the 'poorest' households for each region. Table 12 represents the coefficient estimation of the Linear Expenditure System (LES) for the poorest households. The interpretation of the coefficients in Table 12 is the same as the previous interpretation of coefficients in Table 3.

Table 12. The Coefficients of Estimate Demand Estimation (for the 'Poorest' Household)

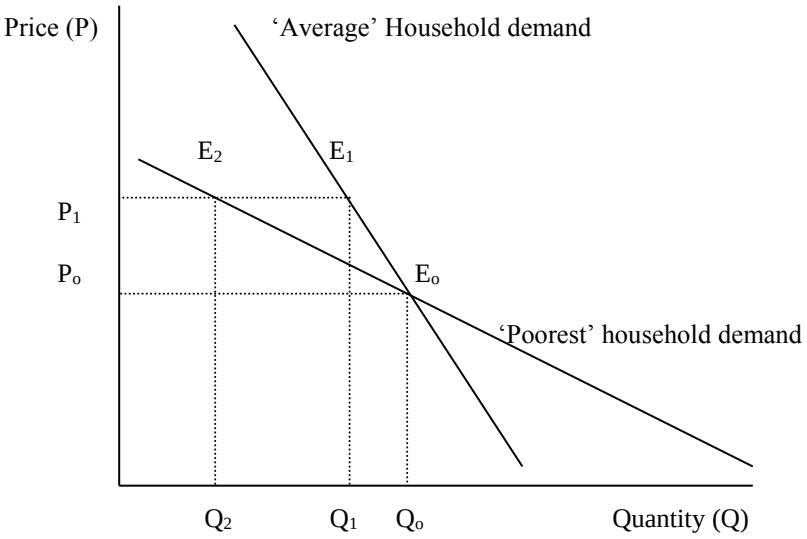
	Indonesia		Java+Bali		Sumatra		Kalimantan		Sulawesi		Rest	
Coeff.	**Urban**	**Rural**	**Urban**	**Rural**	**Urban**	**Rural**	**Urban**	**Rural**	**Urban**	**Rural**	**Urban**	**Rural**
x_1^o	5.4619	4.8383	5.7896	11.8820	7.4341	7.6562	6.1464	7.6669	9.1341	7.4997	6.3513	5.9405
x_2^o	0.5491	-3.0839	-0.4745	-3.5300	0.9383	0.9864	-2.4605	0.3879	5.6222	-1.5078	0.2704	1.9879
x_3^o	-0.3930	3.6266	-0.7742	5.2485	-0.1187	1.5227	0.2952	0.3738	-2.1742	-0.6645	2.2349	-0.6107
x_4^o	0.6176	0.5949	-0.0068	-0.4069	0.0592	1.2688	-0.2128	0.9490	0.9711	0.9528	0.9611	0.2919
x_5^o	0.0479	0.0120	0.2691	0.0183	0.0549	0.0176	0.0988	0.0097	0.0377	-0.1210	0.1755	-0.4599
x_6^o	1.8126	1.0380	0.4715	0.6609	0.5506	1.3753	1.5588	-0.5873	3.6321	0.7391	-0.8714	-0.9326
x_7^o	0.0854	0.2324	0.1477	0.1638	0.4410	0.2877	0.2706	0.5837	0.7064	0.4990	0.9115	-0.1097
x_8^o	0.1947	1.0713	0.4249	1.9806	0.1995	-0.2803	0.4128	0.0531	1.2048	0.0735	0.8334	-0.2781
x_9^o	0.4915	1.4991	0.3484	1.4210	1.2829	1.1758	1.4039	0.8513	3.1880	1.1373	0.3437	-0.5117
x_{10}^o	-0.0084	0.0602	-0.1330	-0.6786	0.1136	0.1070	-0.6072	1.5533	-2.1586	1.1843	1.3082	-0.1685
α_1	-3.1526	0.0337	0.3842	-1.9190	-1.4719	-2.0719	1.1955	-1.2397	-0.7731	-2.4643	-0.5878	-0.7533
α_2	-12.9030	-0.0297	-0.0208	-21.8860	-5.3151	-7.9353	6.0988	-4.2797	-1.5326	1.4312	-2.0747	1.2129
α_3	-1.2305	0.4140	0.0021	1.0265	-0.2759	-0.1026	0.1777	-0.1138	-0.6299	12.2620	-0.0634	0.2681
α_4	-0.0015	-0.0049	0.0036	-0.0046	-0.0019	0.0021	0.0040	-0.8145	-0.0003	-0.0355	-0.2311	-0.0525
α_5	-0.0497	0.0342	0.9824	-0.0074	-0.0113	-0.0145	0.0301	-0.1503	-0.0087	0.3916	-0.1491	5.8810
α_6	0.0074	0.0011	0.0130	0.0061	-0.0050	0.0049	0.0042	-0.3327	0.0062	-0.0945	-0.2259	-0.0934
α_7	-1.0972	0.2420	-2.5102	-1.6724	-0.5336	-0.3821	0.1247	-0.3872	-0.0511	-5.8642	-0.2564	-4.6399
α_8	-0.3137	0.6313	0.1057	3.6912	-0.1177	-0.4112	0.0187	-0.1353	0.3986	-3.0488	0.0472	-1.0567
α_9	-0.1078	-0.0001	0.0032	0.0034	0.0004	0.0004	0.0148	-0.2572	0.0011	-0.0203	-0.0893	-0.0353
α_{10}	19.8490	-0.3217	2.0369	21.7620	8.7320	11.9100	-6.6684	8.7104	3.5896	-1.5577	4.6304	0.2692

Source: *Statistik Harga Pedesaan* (Rural Price Statistic) *Survey Biaya Hidup* (Survey of Living Cost), BPS, calculated.

Note: Statistical analysis is provided in Appendix D.

The most interesting thing in comparing coefficients in Table 12 and Table 3 is that the 'poorest household' (Table 12) has much more price-elastic goods represented by negative x_i^o than the 'average household' does (Table 3). The average household here is defined as household, which have food expenditure more than the minimum expenditure ('household poverty line'). For example, fish (x_3) is a necessity good (price-elasticity less than 1 derived from positive x_3^o) for the average urban household (Indonesia). However, it is luxury good (price-elastic, price elasticity greater than 1 derived from negative x_3^o) for the poorest urban household (Indonesia). It is realistic that the 'poorest household' has much more price-elastic goods because the 'poorest household' is more responsive to price changes than 'average household' is. It is explained by Figure 3.

Figure 3. 'Poorest' and 'Average' Households' Demand



'Poorest' households are more responsive to price changes than 'average' households. Consider there is an increase of price from P_o to P_1, the quantity demanded by 'poorest' household decreases from Q_o to Q_2, meanwhile the quantity demanded by 'average' household decreases only from Q_o to Q_1. Since food is necessity good, it is theoretically believed that demand for food is relatively more price-inelastic.

Based on the estimate coefficients in Table 12 and three scenarios (IFLS, BPS and Optimistic), the welfare changes of the 'poorest' households can be derived. Table 13 and 14 represent the absolute welfare change and the welfare change relative to total food expenditure pre-crisis of the 'poorest' households respectively. In general, the urban

'poorest' household is affected by economic crisis more seriously than the rural 'poorest' household in all regions (except Sumatra) in term of the absolute welfare change EV and CV under scenario I and II. In term the welfare change (CV, EV) relative to total food expenditure, the urban 'poorest' household is still hit by economic crisis in the more serious condition than the rural 'poorest' household in all regions under scenario I, II and III although there are not much differences.

Table 13. The Absolute Welfare Change Measured by EV and CV (Rp/household),1996-1998

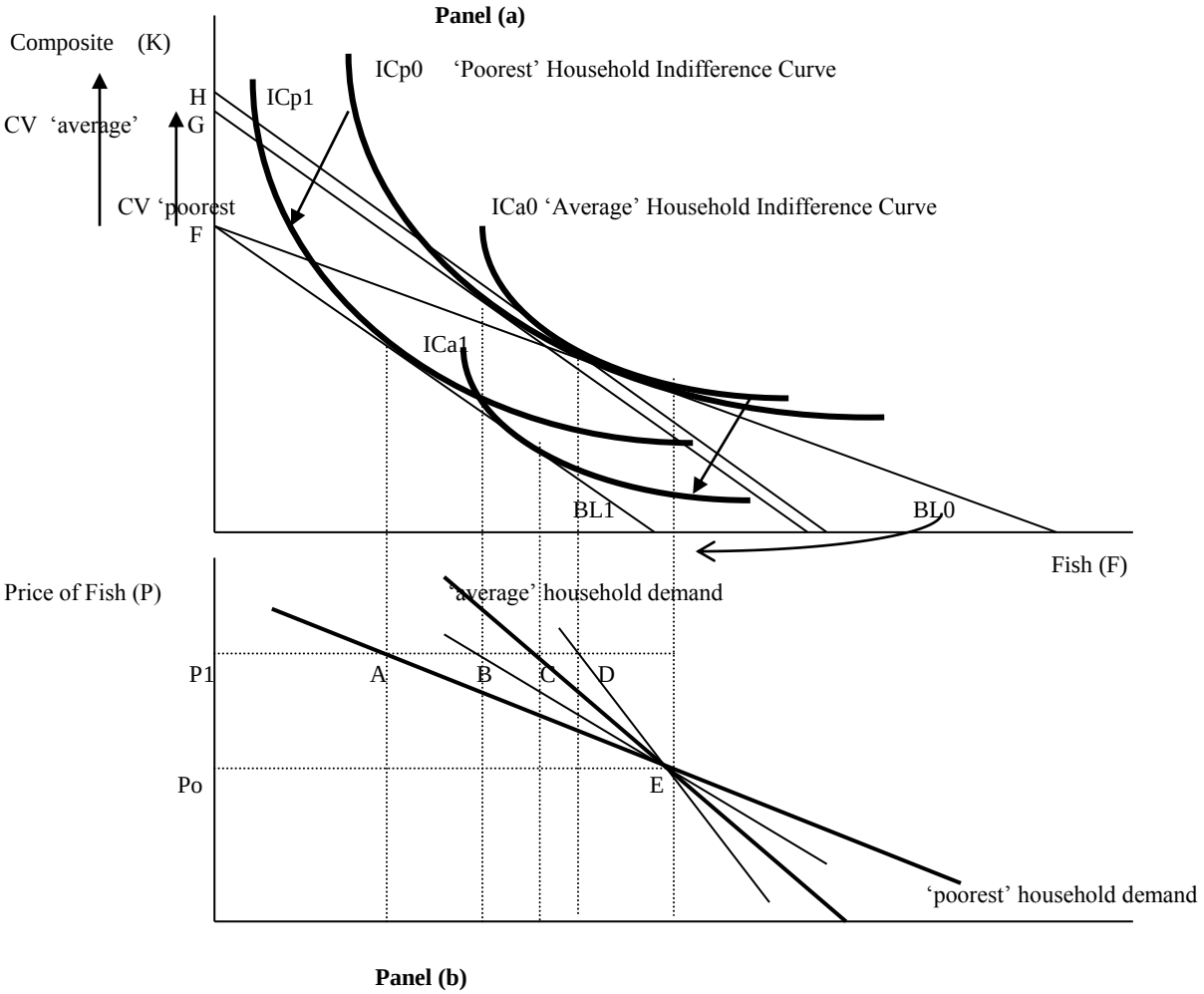
Region		Total Welfare Cahnge						Monthly Average Welfare Change					
		IFLS Adjusted		BPS		Optimistic		IFLS Adjusted		BPS		Optimistic	
		EV	CV	EV	CV	EV	CV	EV	CV	EV	CV	EV	CV
Indonesia	Urban	-24,371	-58,106	-23,496	-48,588	-13,162	-38,255	-1,015	-2,421	-979	-2,024	-548	-1,594
	Rural	-17,851	-49,490	-17,017	-39,974	-5,091	-28,049	-744	-2,062	-709	-1,666	-212	-1,169
Java+Bali	Urban	-16,826	-40,276	-16,178	-33,586	-8,836	-26,245	-701	-1,678	-674	-1,399	-368	-1,094
	Rural	-15,443	-41,257	-14,669	-33,111	-4,261	-22,703	-643	-1,719	-611	-1,380	-178	-946
Sumatra	Urban	-21,744	-56,778	-21,034	-47,883	-11,738	-38,587	-906	-2,366	-876	-1,995	-489	-1,608
	Rural	-21,678	-63,313	-20,760	-51,579	-6,477	-37,297	-903	-2,638	-865	-2,149	-270	-1,554
Kalimantan	Urban	-33,282	-78,612	-31,965	-65,436	-17,396	-50,867	-1,387	-3,276	-1,332	-2,727	-725	-2,119
	Rural	-22,046	-58,109	-20,913	-46,523	-5,993	-31,603	-919	-2,421	-871	-1,938	-250	-1,317
Sulawesi	Urban	-22,893	-56,577	-22,064	-47,382	-12,153	-37,471	-954	-2,357	-919	-1,974	-506	-1,561
	Rural	-12,446	-34,351	-11,860	-27,727	-3,545	-19,412	-519	-1,431	-494	-1,155	-148	-809
Rest	Urban	-24,601	-63,396	-23,778	-53,377	-13230	-42,828	-1,025	-2,641	-991	-2,224	-551	-1,785
	Rural	-17,695	-51,003	-16,928	-41,461	-5226.14	-29,760	-737	-2,125	-705	-1,728	-218	-1,240

Source: *Statistik Harga Pedesaan* (Rural Price Statistic) *Survey Biaya Hidup* (Survey of Living Cost), BPS, and Frankenberg, Thomas and Beegle (1999), *calculated*.

Comparing Table 7 and Table 13, it is clear that smaller compensation is needed to get the same level of welfare (utility) to the 'poorest' households than to the 'average' households. In other words, the welfare of the 'poorest' households is less affected by the economic crisis than the 'average' households' welfare is. Some reasons could be given for this. *First*, it is believed that the poorest households have higher marginal utility of income (money) than the average households do. Therefore, the 'poorest' households

only need smaller compensation than the 'average' households to reach the same level of utility (welfare) (see figure 4).

Figure 4. CV of 'Poorest' and 'Average' Households



Consider there are two goods consumed by household Fish (F) and Composite good (K). The 'average' and 'poorest' households have different indifference curve represented in panel (a) bringing implication on the difference in the marginal rate of substitution ($MRS_{F \text{ for } K}$) and the marginal utility of income. Suppose there is an increase in price of fish such that budget line rotates from BL0 to BL1. The 'Average' and 'poorest' household demand can be derived in panel (b) (same with Figure 3). Compensating variation for 'average' household is FH in panel (a) or area P1DEPo in panel (b) which is greater than Compensating variation for 'poorest' household i.e. FG in panel (a) or area P1BEPo.

Second, the 'poorest' households have been common to be in the 'food insufficient' condition, therefore they might be more adaptable to the economic crisis condition. In other words, the poorest households have been normalized by 'insufficient food'

condition. Therefore, when there are some increases in food prices and decreases in income, they only need smaller amount of money to compensate them back to the level of welfare (utility). Comparing among regions, still rural and urban 'poorest' households in Kalimantan are hit by crisis the more than other regions.

Table 14. The Welfare Change Measured by CV, EV Relative to Total Food Expenditure pre-crisis (%), 1996-1998

Region		Total Welfare Cahnge						Monthly Average Welfare Change					
		IFLS Adjusted		BPS		Optimistic		IFLS Adjusted		BPS		Optimistic	
		EV	CV	EV	CV	EV	CV	EV	CV	EV	CV	EV	CV
Indonesia	Urban	-130	-310	-125	-259	-70	-204	-5.4	-12.9	-5.2	-10.8	-2.9	-8.5
	Rural	-110	-306	-105	-247	-31	-173	-4.6	-12.8	-4.4	-10.3	-1.3	-7.2
Java+Bali	Urban	-126	-302	-121	-252	-66	-197	-5.3	-12.6	-5.1	-10.5	-2.8	-8.2
	Rural	-109	-292	-104	-235	-30	-161	-4.6	-12.2	-4.3	-9.8	-1.3	-6.7
Sumatra	Urban	-129	-337	-125	-284	-70	-229	-5.4	-14.0	-5.2	-11.8	-2.9	-9.5
	Rural	-112	-327	-107	-266	-33	-193	-4.7	-13.6	-4.5	-11.1	-1.4	-8.0
Kalimantan	Urban	-126	-297	-121	-248	-66	-192	-5.2	-12.4	-5.0	-10.3	-2.7	-8.0
	Rural	-109	-287	-103	-230	-30	-156	-4.5	-12.0	-4.3	-9.6	-1.2	-6.5
Sulawesi	Urban	-127	-315	-123	-263	-68	-208	-5.3	-13.1	-5.1	-11.0	-2.8	-8.7
	Rural	-110	-305	-105	-246	-31	-172	-4.6	-12.7	-4.4	-10.2	-1.3	-7.2
Rest	Urban	-129	-331	-124	-279	-69	-224	-5.4	-13.8	-5.2	-11.6	-2.9	-9.3
	Rural	-112	-321	-107	-261	-33	-188	-4.6	-13.4	-4.4	-10.9	-1.4	-7.8

Source: *Statistik Harga Pedesaan* (Rural Price Statistic) *Survey Biaya Hidup* (Survey of Living Cost), BPS, and Frankenberg, Thomas and Beegle (1999), *calculated*.

Table 15 shows the welfare change per month relative to total food expenditure for the 'average' household and 'poorest' household. It is clear that the impact of economic crisis on the 'average' and 'poorest' households' welfare is relatively the same in term of (CV) relative to total food expenditure based on scenario I (IFLS). The similar conclusion is also found if scenario III (optimistic) applied. But, scenario II (BPS) gives result that the 'poorest' households are hit by economic crisis in the more severe condition than 'average' households in bot rural and urban areas in term of (CV) relative to total food expenditure. Table 15 also shows that although urban household should be compensated in much more than rural household in absolute term, the compensation relative to the

total food expenditure before the crisis is not much difference between rural and urban household even using scenario I (IFLS) and scenario III (optimistic).

Table 15. The Average Welfare Change per month Relative to Total Food Expenditure (Rp/household/month), 1996-1998

Region		IFLS Adjusted				BPS				Optimistic			
		Average Household		Poorest Household		Average Household		Poorest Household		Average Household		Poorest Household	
		EV	CV	EV	CV	EV	CV	EV	CV	EV	CV	EV	CV
		1	2	3	4	5	6	7	8	9	10	11	12
Indonesia	Urban	-5.3	-13.1	-5.4	-12.9	-4.5	-10.4	-5.2	-10.8	-2.8	-8.7	-2.9	-8.5
	Rural	-4.6	-12.7	-4.6	-12.8	-2.4	-8.3	-4.4	-10.3	-1.3	-7.1	-1.3	-7.2
Java+Bali	Urban	-5.3	-12.6	-5.3	-12.6	-4.5	-9.9	-5.1	-10.5	-2.8	-8.2	-2.8	-8.2
	Rural	-4.1	-15.7	-4.6	-12.2	-2.0	-10.2	-4.3	-9.8	-0.9	-9.1	-1.3	-6.7
Sumatra	Urban	-5.4	-14.0	-5.4	-14.0	-4.6	-11.2	-5.2	-11.8	-2.9	-9.5	-2.9	-9.5
	Rural	-4.7	-13.6	-4.7	-13.6	-2.5	-9.1	-4.5	-11.1	-1.2	-7.8	-1.4	-8.0
Kalimantan	Urban	-5.2	-12.4	-5.2	-12.4	-4.4	-9.7	-5.0	-10.3	-2.7	-8.0	-2.7	-8.0
	Rural	-4.5	-12.0	-4.5	-12.0	-2.3	-7.6	-4.3	-9.6	-1.3	-6.5	-1.2	-6.5
Sulawesi	Urban	-5.3	-13.1	-5.3	-13.1	-4.5	-10.4	-5.1	-11.0	-2.8	-8.7	-2.8	-8.7
	Rural	-4.6	-12.7	-4.6	-12.7	-2.4	-8.3	-4.4	-10.2	-1.2	-7.1	-1.3	-7.2
Rest	Urban	-5.4	-13.8	-5.4	-13.8	-4.6	-11.0	-5.2	-11.6	-2.9	-9.3	-2.9	-9.3
	Rural	-4.6	-13.4	-4.6	-13.4	-2.5	-8.9	-4.4	-10.9	-1.2	-7.7	-1.4	-7.8

Source: *Statistik Harga Pedesaan* (Rural Price Statistic) *Survey Biaya Hidup* (Survey of Living Cost), BPS, and Frankenberg, Thomas and Beegle (1999), *calculated*.

VI. CONCLUSION

Increase in food prices due to economic crisis has increased the minimum food expenditure (*subsistence* food expenditure) of both urban and rural households. During 1996-1998, the increase in the household's *subsistence* food expenditure was averagely more than doubled. Therefore, it is clear that the share of food expenditure on the total expenditure of urban and rural household increased drastically. The rural and urban households have adjusted the economic crisis by reducing the non-food consumption and redistributing that expenditure to the food consumption. The households selling the assets to fulfil the minimum food expenditure have indicated this phenomenon. In other words,

the urban and rural households have reallocated and redistributed their income and wealth to adapt to the economic crisis.

In general, the economic crisis has decreased the economic welfare of urban and rural households. The increases in food prices and the decrease of income due to economic crisis have lowered urban and rural household's power parity (real income) and then decreased their welfare (utility). In term of compensation, urban households need to be compensated more than rural households are, because urban households have been hit by the economic crisis in the more serious condition than the rural households have. Again, this research focus on the food consumption, therefore the compensation of the economic crisis here is defined as 'compensation for foods consumption' only. Some reasons could be indicated for answering question why urban households are most effected by the crisis than rural households. They are the structure of consumption, unemployment and monetary level of society. Comparing among regions, rural and urban households in Kalimantan have been effected by the economic crisis in the worst condition than the other regions.

This research has tried to determine the 'household poverty line'. Then, the research analyses the impact of the economic crisis on the households' welfare which are under the 'household poverty line' (called 'poorest' household). The result shows that the economic crisis has hit the rural and urban 'poorest' households, i.e. lowering their welfare. Again, the urban 'poorest' households have been hit by economic crisis in the more serious condition than the rural 'poorest' households have. Comparing with the

'average' households (households above the 'household poverty line'), the result shows that the 'average' households have effected by the economic crisis in the more serious condition than the 'poorest' households have in both urban and rural areas.

VII. REFERENCE

Asian Development Bank (ADB), 1999. *Assessing the Social Impact of the Financial Crisis in Selected Asian Developing Economies*.

Asra, A., 1999. 'Rural-urban differences in cost of living and their impact on poverty measures. *Buletin of Indonesian Economies*. Vol. 35 no. 3, December.

Barten, A.P., 1977.'The system of consumer demand function approach: a review'. *Econometrica* 45:23-51. Also in M.D. Intriligator, Ed., *Frontier of Quantitative Economics*, Vol.3. Amsterdam:North-Holland Publishing Company.

Bhattacharya, N., 1967.'Consumer behaviour in India- an application of the Linear Expenditure System'. *Economic and Political Weekly*, Dec. 2.

Deaton A.S. and J. Muellbauer., 1980. *Economic and Consumer Behaviour*. Cambridge: Cambridge University Press.

Deaton, A.S., 1986. 'Demand analysis'. in Z. Griliches and M.D. Intriligator, Ed, *Handbook of Econometrics*, Vol. 2. Amsterdam: Norh-Holland Publishing Company.

Elaine, H., 1999.'Factors affecting food decisions made by individual consumers'. *Food Policy*. Vol. 24: 287-94.

Frankenberg,E., Thomas, D. and Beegle, K. 1999. The Real Cost of Indonesia's Economic Crisis: Preliminary Findings from the Indonesia Family Life Survey. *Labour and Population Program Working Paper Series 99-04*.

Geary, R.C., 1950. 'A note on a constant utility index of the cost of living'. *Review of Economic Studies*. XVIII (I). No. 45: 65-66.

Griffiths, W., R.C. Hill and G.G. Judge, 1993. *Learning and Practicing Econometrics*. John Wiley and Sons, Inc. Canada.

Hicks, J., 1939. *Value and Capita*, Oxford: Clarendon Press.

Howe, H., 1974. *Estimation of the linear and quadratic expenditure systems: A cross-section case for Colombia*. University Microfilm Internatinal, Ann Arbor, Michigan, USA, London, Engalnd.

Intriligator, M.D., Bodkin, R.G. and Hsiao,C., 1996. *Econometric Models, Techniques, and Applications*. Prentice–Hall Inc, Upper Saddle River, NJ 07458.

Jerome, N.W., 1982. 'Dietary patterning and change: a continuos process'. *Contemporary Nutrition Newsletter*. 7(6), General Mills, Inc.

Joseph, P., 1968. 'Application of linear expenditure system to NSS data some further result,' *Economic and Political Weekly*. April 13.

Judge, G.G., Hill. R.C., Griffiths. W.E. Helmut,L., and Lee.T.C., 1982. *Introduction to the Theory and Practice of Econometrics*. John Wiley and Sons, Inc. Canada

Kittler, P.G. and Sucher, K.P., 1995. *Food and Culture in America*. 2nd ed. West/Wadsworth. Belmont. CA.

Klein, L.R., and Rubin, H., 1948. 'A constant utility index of the cost of living'. *Review of Economic Studies*. XV(2). No. 38: 84-87.

Lowenberg, M.E., Thodunter, E.N., Wilson, E.D., Savage, J.R., Lubawski, J.L., 1974. *Food and Man*, 2nd ed. John Wiley and Sons, New York.

Maning, C., 2000.'Labour market adjustment to Indonesia's economic crisis: context, trends and implications'. *Bulletin of Indonesian Economic Studies*, Vol. 36, No. 1, April: 105-36.

Mas-Colell, A., Whinston, M.D. and Green, J.R., 1995. *Microeconomic Theory*. Oxford University Press. New York.

Philips, L., 1993. *Applied Consumption Analysis*. Revised and enlarged ed. Amsterdam: North Holland Publishing Company.

Pollak, R.A., 1968. 'Additive utility function and linear Engel curves'. *Discussion Paper*. No 53, Department of Economics, University of Pennsylvania, revised Feb.

Puspham, P. and Ashok, R., 1964. " Demand elasticity for food grain'. *Economic and Political Weekly*. Nov. 28.

Ranjan, R. 1985. 'A dynamic analysis of expenditure pattern in rural India'. *Journal of Development Economic*s. Vol. 19.

Samuelson, P.A. , 1948. 'Some implication of linearity'. *Review of Economic Studies*. XV (2). No. 38: 88-90

Satish, R. and Sanjib, P., 1999. 'An analysis of consumption expenditure of rural and urban income groups in LES framework. *ASIAN Economies*.

Senauer, B.Asp, E. and Kinsey, J., 1991. *Food Trends and the Changing Consumer*. Eagan Press, St., Paul, MN.

Sloan, A.E., 1994. 'Top trend to watch and work on'. *Food Technology*. Vol. 48 (6):89-100

Sloan, A.E., 1996.'America's appetite '96: the top 10 trends to watch and work on'. *Food Technology*. Vol. 52(1):37-44.

Sloan, A.E., 1998. 'Food Industry forecast: consumer trends to 2020 and beyond'. *Food Technology*. Vol. 52(1):55-71.

Solari, L., 1971. *Théorie des Choix et Fonctions de Consommation Semi-Agrégées: Modéles Statiques*. Genéve: Librairie Droz: 59-63.

Stone, R., 1954. 'Linear expenditure system and demand analysis: an application to the pattern of Britissh demand.' *Economic Journal*. 64:511-27.

Sumarto, S., Wetterberg, A. and Pritchett, L. 1999. *The Social Impact of the Crisis in Indonesia: Results from a Nationwide Kecamatan Survey*. Cited on 16 September 2000 from http://www.worldbank.org/html/extdr/offrep/eap/pdfs/pubs/idsoc1.pdf.

Sutanto, A. et al., 1999. 'Poverty Measurement: Problems and Developmenrt', *paper presented at the "International Conference on Methodologies of Poverty Calculation in Indonesia"*. Jakarta.

The Central Bureau of Statistics (Badan Pusat Statistik, BPS) of Indonesia, 1980, 1981, 1984, 1987, 1990, 1993, 1996. *Statistik Harga Konsumen Pedesaan Di Java Dan Sepuluh Provinsi Luar Java* (Rural Consumer Price Statistics in Java and Ten Provinces Out of Java). Jakarta.

The Central Bureau of Statistics (Badan Pusat Statistik, BPS) of Indonesia, 1980, 1981, 1984, 1987, 1990, 1993, 1996. *Survey Biaya Hidup* (Survey of Living Cost) . Jakarta.

Appendix A. Data Approximation

Due to incompleteness of all prices data for each province per year observation (1980, 1981, 1984, 1987, 1990, 1993), we will use the interpolation process to find that data. Problems about data and how to make interpolation problems are presented in this appendix. Basically, the incompleteness of data can be categorised into two, i.e.:

1. No data in a specific province *for some years observation*.

For example, Bali province has no data 1980, 1981 and 1984, but has data 1987, 1990 and 1993. We will use the interpolation based on the growth of the price data available to fulfil price data 1980, 1981 and 1984. The reason for doing this is based on the fact that:

a. The prices of foods tend to increase
b. The increase (growth) of food prices is relatively small (say *g* per three years)

Therefore, the prices of foods in a specific year can be formulated as follows:

$$p_t = (1+g)\, p_{t-3}$$

Where:
p_t is the price of food in year t
p_{t-1} is the price of food in year t-3
g is the growth rate of the food prices for 3 years

2. No Data in a specific province *for all years observation*.

If we don't have data of food prices in a specific province for all years' observation, we use information about that data from the nearest provinces to calculate interpolation data for the province. This process is based on the trade theory is that:

a. Foods are perishable goods, therefore without manufacturing process (for example: canned process, etc.) the different of prices of foods in one province to the other provinces are mainly caused by transaction cost. Therefore, the distance of the province matters.
b. In fact that foods flow from the areas (provinces) which have a surplus of food to the other areas (provinces) which have a deficit of foods

For example, Jambi does not have data of food prices at all but we have data about food prices in some the provinces surrounded Jambi, i.e. West Sumatra, Riau, and South Sumatra provinces. So, we can use that information to interpolate data of Jambi. Mathematically, the interpolation can be formulated as follows:

$$p_{it} = \frac{\sum_{j=1}^{n} p_{jt}}{n}$$

Where:
p_{it} is food prices in province i in year t
p_{jt} is food prices in province j in year t
n is number of the provinces surrounding province i

3. No Data in Urban Area.

We can not find the food prices data in urban area. Therefore we use the food prices data in rural area information to make interpolation data for urban area by transforming the

rural data with the index namely the Ratios of Urban to Rural Prices (U-RPR) that is formulated as (Laspeyre's formula):

$$I = \frac{\sum_j p_u^j q_r^j}{\sum_j p_r^j q_r^j}$$

where p^j and q^j is quantity for food item j; and u and r denote urban and rural respectively. The Ratio of Urban to Rural Prices for food each year observation is presented in table A.1.

Table A.1. The Ratio of Urban to Rural Prices

Year	U-RPR for food
1980	1.10
1981	1.10
1984	1.12
1987	1.13*
1990	1.15
1993	1.16*
1996	1.16*

* Taken from Asra (199)

$$p_t^{ui} = (URPR)\, p_t^{ri}$$

The data of food prices in rural area can be calculated by applying a formula:

Where p_t^{ui} the food prices in urban area in province i in year t, p_t^{ri} is the food prices in rural area in province i in year t, and URPR is The Ratio of Urban to Rural Prices for food in year t. The result of the data approximation is presented in the appendix G.

Appendix B. Commodity Groups

We will use the average of the price of commodity group:

$$p_k = \frac{\sum_{i=1}^{n} p_{ki}}{n}$$

Where p_k is price of commodity group k, p_{ki} is the price of commodity i in group commodity k and n is the number of commodities in the commodity group k.

Table A2. Commodity Groups

Commodity Group	Code	Commodity
Cereal (X1)		
	X1.1.	Rice
	X1.2	Corn
Tubers (X2)		
	X.2.1	Cassava
	X.2.2.	Sweet potato
Fish (X3)	X.1.1.	Salty Fish
Meat (X4)		
	X.4.1.	Beef
	X.4.2.	Chicken
Eggs and Milk (X5)		
	X.5.1.	Milk
	X.5.2.	Chicken egg
	X.5.3.	Duck egg
Vegetables (X6)		
	X.6.1.	Snake bean
	X.6.2.	Potato
	X.6.3.	Red chilli
	X.6.4.	Eggplant
	X.6.5.	Cabbage
	X.6.6.	Coconut
	X.6.7.	Onion
	X.6.8.	Garlic
	X6.9.	cool flower
Nuts (X7)		
	X.7.1	Peanut
	X.7.2.	Mug bean
	X.7.3.	Tofu
	X.7.4.	Tempe
Fruits (X8)		
	X.8.1.	Banana
	X.8.2.	Papaya
	X.8.3.	Orange
	X.8.4.	Pineapple
Prepared food (X9)		
	X.9.1.	Tea
	X.9.2.	White sugar
	X.9.3.	Coffee
	X.9.4.	Java sugar
Tobacco (X10)	X.10.1.	Tobacco

Appendix C. Statistical Analysis: Average Household

1. Testing for Contemporaneous correlation

If there contemporaneous correlation does not exist, the least square (OLS) rule separately to each equation is fully efficient an the there is no need to apply the seemingly unrelated regression (SUR) (Griffiths 1993:561). Therefore, if there is uncertainty concerning this proposition, it is useful to test whether the contemporaneous covariance are zero.

H_o: $\sigma_{21} = \sigma_{31} = \sigma_{32} = \ldots\ldots\ldots\ldots = \sigma_{98} = 0$ (or $\sigma_{ij}=0$ for all $i \neq j$)

H1: at least one covariance is non-zero

The appropriate test statistic, under the normal linear model, is given by:

$$\lambda = T\left(r_{21}^2 + r_{31}^2 + r_{32}^2 + \ldots\ldots\ldots\ldots\ldots + r_{98}^2\right)$$

where is the squared correlation $r_{ij}^2 = \dfrac{\hat{\sigma}_{ij}^2}{\hat{\sigma}_{ii}\,\hat{\sigma}_{jj}}$ and $\hat{\sigma}_{ij} = \left(y_i - x_i b_i\right)\left(y_j - x_j b_j\right) / T$.

Table A.3. Contemporaneous Test for the 'Average' and 'Poorest' Households

No	*Regions*	λ	Decisions
	Average Household		
1	Urban Indonesia	1.215E+07	Reject H_o and conclude there is **Contemporaneous**
2	Rural Indonesia	2.442E+07	Reject H_o and conclude there is **Contemporaneous**
3	Urban Java+Bali	2.503E+06	Reject H_o and conclude there is **Contemporaneous**
4	Rural Java+Bali	4.076E+06	Reject H_o and conclude there is **Contemporaneous**
5	Urban Sumatra	2.205E+07	Reject H_o and conclude there is **Contemporaneous**
6	Rural Sumatra	4.447E+06	Reject H_o and conclude there is **Contemporaneous**
7	Urban Kalimantan	1.655E+07	Reject H_o and conclude there is **Contemporaneous**
8	Rural Kalimantan	2.653E+07	Reject H_o and conclude there is **Contemporaneous**
9	Urban Sulawesi	1.763E+07	Reject H_o and conclude there is **Contemporaneous**
10	Rural Sulawesi	4.664E+06	Reject H_o and conclude there is **Contemporaneous**
11	Urban Rest	7.449E+06	Reject H_o and conclude there is **Contemporaneous**
12	Rural Rest	1.297E+09	Reject H_o and conclude there is **Contemporaneous**
	Poorest Household		
1	Urban Indonesia	4.210E+07	Reject H_o and conclude there is **Contemporaneous**
2	Rural Indonesia	5.706E+08	Reject H_o and conclude there is **Contemporaneous**
3	Urban Java+Bali	1.349E+08	Reject H_o and conclude there is **Contemporaneous**
4	Rural Java+Bali	1.778E+07	Reject H_o and conclude there is **Contemporaneous**
5	Urban Sumatra	6.110E+06	Reject H_o and conclude there is **Contemporaneous**
6	Rural Sumatra	2.221E+07	Reject H_o and conclude there is **Contemporaneous**
7	Urban Kalimantan	2.066E+08	Reject H_o and conclude there is **Contemporaneous**
8	Rural Kalimantan	2.066E+08	Reject H_o and conclude there is **Contemporaneous**
9	Urban Sulawesi	1.896E+07	Reject H_o and conclude there is **Contemporaneous**
10	Rural Sulawesi	2.546E+08	Reject H_o and conclude there is **Contemporaneous**
11	Urban Rest	1.763E+08	Reject H_o and conclude there is **Contemporaneous**
12	Rural Rest	5.390E+08	Reject H_o and conclude there is **Contemporaneous**

Under H_o, the test statistic λ has an asymptotic χ^2-distribution with N(N-1)/2 (in our case 9(9-1)/2=36) degree of freedom, where N is the number of equations and the

estimated error correlation are used in the computation of λ. The null hypothesis is rejected if λ is greater than the critical value for a $\chi^2_{(36)}$-distribution at pre-specified significance level. At significance levels α=1%, α=5% and α=10% the critical values $\chi^2_{(36)}$ are about 63.6907; 55.7585 and 51.8050 respectively. The calculated λ and the decision about the contemporaneous correlation test for each region are presented in Table A.3.

2. Testing for significance of the coefficient estimate:

When error term e is not normally distributed, or independent variable X is random, we have to refer to large sample distributions. We assume that X'X/T converges to a finite non-singular matrix $\sum_{xx}$, and that X, if it is random, is at least contemporaneously uncorrelated with error term e (Griffiths 1993:453). The estimate b_k will be normally distributed.

$$\frac{b_k - \beta_k}{\sqrt{\hat{var}(b_k)}} \approx N(0,1)$$

The large sample theory suggests that normal distribution not the t-distribution should be used. The appropriate test is:

H_o: β_k=0
H_1: $\beta_k \neq 0$

The calculated t-statistic is:

$$t = \frac{b_k - 0}{\sqrt{\hat{var}(b_k)}} \approx N(0,1)$$

The null hypothesis is rejected if t-statistic is greater than the critical value for a N(0,1) distribution at pre-specified significance level. At significance levels α=1%, α=5%, α=10%, α=15% and α=20%, the critical values N(0,1) are about 2.57; 1.96; 1.65; 1.44 and 1.28 respectively. Tables below represent the significance test of each estimate parameters for each region:

* significant at level of significance, α=1%,
** significant at α=5%,
*** significant at α=10%,
**** significant at α=15%,
***** significant at α=20%.

	INDONESIA						JAVA+BALI					
	URBAN			RURAL			URBAN			RURAL		
Parameters	**Coeff.**	**Std. Error**	**t-ratio**	**Coeff.**	**Std. Error**	**t-ratio**	**Coeff.**	**Std. Error**	**t-ratio**	**Coeff.**	**Std. Error**	**t-ratio**
x_1^o	6.4476*	1.0000	6.4475	8.7832*	1.0754	8.1676	9.4896*	1.0526	9.0153	9.9191*	1.0007	9.9117
x_2^o	12.1800*	0.6914	17.6150	12.4510*	0.6384	19.5030	10.0640*	0.6313	15.9430	11.6500*	0.6457	18.0420
x_3^o	0.3976**	0.1905	2.0869	0.8447**	0.4342	1.9454	1.2227*	0.1480	8.2599	0.4230	0.2590	1.6333
x_4^o	0.8382*	0.0626	13.3880	0.8240*	0.0613	13.4430	0.4932*	0.0446	11.0590	0.2018*	0.0550	3.6705
x_5^o	0.3293*	0.0218	15.1300	0.1487*	0.0137	10.8460	0.3354*	0.0318	10.5400	0.1493*	0.0197	7.5981
x_6^o	1.8147*	0.0986	18.4050	1.0872*	0.0781	13.9220	1.9147*	0.0727	26.3460	0.8332*	0.0782	10.6570
x_7^o	1.1915*	0.1074	11.0940	1.1464*	0.0833	13.7620	1.0681*	0.0985	10.8480	1.0684*	0.0671	15.9320
x_8^o	0.7531*	0.0595	12.6600	0.5635*	0.0555	10.1510	1.1469*	0.0821	13.9770	0.6922*	0.0958	7.2262
x_9^o	0.9827*	0.0716	13.7230	1.4060*	0.0639	21.9910	1.3183*	0.0952	13.8470	1.3864*	0.1170	11.8460
x_{10}^o	-3.3644*	0.2841	-11.8420	-0.7*****	0.5341	-1.3054	-2.2745**	1.0868	-2.0928	-2.2148*	0.2862	-7.7393
α_1	-0.1909*	0.0612	-3.1168	-0.2477*	0.0346	-7.1632	-0.2281*	0.0408	-5.5943	-0.2382*	0.0622	-3.8276
α_2	0.1086***	0.0685	1.5842	-0.0651	0.0613	-1.0614	-0.08****	0.0521	-1.4920	-0.0679	0.0613	-1.1074
α_3	-0.0259**	0.0112	-2.3053	-0.0466**	0.0232	-2.0090	-0.005****	0.0035	-1.5049	-0.0421*	0.0067	-6.2481
α_4	-0.0072	0.0096	-0.7492	0.0010	0.0054	0.1823	-0.0016	0.0050	-0.3195	-0.0088	0.0080	-1.0990
α_5	0.0040	0.0037	1.0760	-0.0005	0.0022	-0.2465	-0.0012	0.0037	-0.3288	-0.0013	0.0021	-0.6240
α_6	-0.0157	0.0132	-1.1919	-0.0016	0.0049	-0.3259	-0.0017	0.0058	-0.2985	0.0036	0.0060	0.6042
α_7	-0.0061	0.0213	-0.2856	-0.0087	0.0143	-0.6096	-0.018****	0.0116	-1.5855	-0.0096	0.0104	-0.9251
α_8	0.0092	0.0126	0.7267	0.0135**	0.0058	2.3085	0.0254**	0.0104	2.4366	-0.0086	0.0141	-0.6074
α_9	-0.0218	0.0231	-0.9423	0.0017	0.0088	0.1887	0.0039	0.0118	0.3297	0.0187	0.0193	0.9714
α_{10}	1.1458*	0.1368	8.3745	1.3542*	0.0826	16.3943	1.3049*	0.0784	16.6501	1.354*	0.0870	15.5634
Log likelihood: : -9278.571				Log likelihood: -9362.236			Log likelihood: -1654.984			Log likelihood: : -1660.010		

	SUMATRA						KALIMANTAN					
	URBAN			RURAL			URBAN			RURAL		
Parameters	**Coeff.**	**Std. Error**	**t-ratio**	**Coeff.**	**Std. Error**	**t-ratio**	**Coeff.**	**Std. Error**	**t-ratio**	**Coeff.**	**Std. Error**	**t-ratio**
x_1^o	9.3346*	1.2128	7.6968	6.4451*	1.0024	6.4297	6.2924*	1.0000	6.2925	7.7184*	0.9999	7.7188
x_2^o	1.5059*	0.2539	5.9303	12.7470*	0.6584	19.3600	7.0438*	0.6822	10.3260	2.4665*	0.3331	7.4042
x_3^o	0.3745***	0.1973	1.8979	0.25*****	0.1894	1.3069	0.3362	0.0817	4.1165	0.4104*	0.0634	6.4749
x_4^o	0.8502*	0.1641	5.1805	1.0505*	0.0005	2020.6	2.3003*	0.0041	555.3400	1.9606*	0.0054	363.2100
x_5^o	0.2510*	0.0203	12.3700	0.1087*	0.0077	14.0570	0.1893*	0.0151	12.5010	0.1319*	0.0252	5.2320
x_6^o	2.7723*	0.2836	9.7759	1.0393*	0.0038	272.010	4.5638*	0.0105	433.62	1.3389*	0.0374	35.7570
x_7^o	0.2125*	0.0859	2.4750	1.5027*	0.1342	11.1990	0.8851*	0.0955	9.2705	0.4953*	0.0454	10.9130
x_8^o	0.5948*	0.0535	11.1210	0.2335*	0.0363	6.4238	0.3326*	0.0366	9.0918	0.2203*	0.0253	8.6981
x_9^o	0.3784*	0.0700	5.4071	1.7398*	0.1225	14.2040	2.1668*	0.0074	292.79	1.6802*	0.0242	69.3110
x_{10}^o	-0.1862*	0.0798	-2.3348	-1.7062*	0.2562	-6.6592	-0.3****	0.2064	-1.4588	-0.3854*	0.1019	-3.7808
α_1	-1.3632*	0.2316	-5.8860	-0.3199*	0.0670	-4.7737	-0.2406*	0.0926	-2.5986	-1.0*****	0.7843	-1.3086
α_2	-3.3010*	0.3438	-9.6004	-0.1529**	0.0650	-2.3516	-0.209***	0.1270	-1.6450	-2.2502*	0.8935	-2.5184
α_3	-0.1613*	0.0312	-5.1697	-0.0495*	0.0093	-5.3545	-0.0307*	0.0057	-5.3567	-0.0809	0.0671	-1.2056

α_4	-0.0003	0.0003	-1.0992	0.0001**	0.0000	2.3965	0.0004**	0.0002	2.2230	0.008****	0.0057	1.4766
α_5	0.0030	0.0130	0.2305	-0.0007	0.0013	-0.5358	-0.0035	0.0036	-0.9721	-0.0252	0.0348	-0.7243
α_6	-0.0001	0.0014	-0.0370	-0.0002*	0.0001	-2.8942	0.0021*	0.0006	3.7280	-0.06*****	0.0401	-1.3916
α_7	-0.6861*	0.1351	-5.0799	-0.0032	0.0286	-0.1110	-0.0026	0.0179	-0.1428	-0.1169****	0.0791	-1.4780
α_8	0.0264	0.0257	1.0250	-0.007***	0.0041	-1.6244	-0.0173*	0.0068	-2.5600	-0.0040	0.0299	-0.1342
α_9	-0.3108*	0.1163	-2.6727	0.0098	0.0178	0.5513	-0.0078*	0.0018	-4.3179	-0.075*****	0.0533	-1.3980
α_{10}	6.7934*	0.59952	11.3314	1.5232*	0.1127	13.5143	1.5089*	0.21144	7.1363	4.6254*	1.2902	3.5850
Log likelihood: : -2415.311				Log likelihood: -2285.101			Log likelihood: -1110.235			Log likelihood: -1190.913		

	SULAWESI						**REST**					
	URBAN			**RURAL**			**URBAN**			**RURAL**		
Parameters	**Coeff.**	**Std. Error**	**t-ratio**	**Coeff.**	**Std. Error**	**t-ratio**	**Coeff.**	**Std. Error**	**t-ratio**	**Coeff.**	**Std. Error**	**t-ratio**
x_1^o	10.3110*	1.0011	10.3000	12.0000*	1.0497	11.4320	7.8023*	0.9999	7.8032	6.0646*	1.0000	6.0647
x_2^o	6.3059*	0.5994	10.5210	14.5760*	1.5139	9.6281	13.1110*	1.4711	8.9125	1.3*****	0.9992	1.3014
x_3^o	0.6345*	0.1324	4.7922	-1.6691**	0.6600	-2.5290	0.2677	0.4236	0.6319	1.66****	1.0122	1.5763
x_4^o	1.3099*	0.0004	3434.40	0.7725*	0.0655	11.7990	1.0681*	0.1425	7.4945	1.2870*	0.0459	28.0310
x_5^o	0.2471*	0.0245	10.0670	0.1285*	0.0201	6.3793	0.3719*	0.0392	9.4916	0.248****	0.1629	1.5194
x_6^o	2.2915*	0.0020	1132.0	0.9799*	0.0352	27.8780	1.6414*	0.4470	3.6720	0.63*****	0.4716	1.3319
x_7^o	1.0233*	0.0669	15.3060	0.8346*	0.1125	7.4212	1.2687*	0.1309	9.6942	1.1527*	0.3504	3.2895
x_8^o	0.3509*	0.0346	10.1440	0.2528*	0.0434	5.8315	1.0235*	0.0762	13.4260	0.4671*	0.1380	3.3847
x_9^o	1.2448*	0.0560	22.2130	1.2431*	0.1000	12.4300	1.4246*	0.1508	9.4494	2.8246*	0.6221	4.5405
x_{10}^o	-1.9672*	0.2560	-7.6832	-1.1392*	0.3526	-3.2312	-1.3493*	0.3915	-3.4463	-1.8863**	0.8370	-2.2538
α_1	-0.7228*	0.1638	-4.4123	-0.2473*	0.0515	-4.7986	-0.3551*	0.0955	-3.7203	-1.0631	0.9908	-1.0730
α_2	-0.8903*	0.1591	-5.5949	0.0157	0.1038	0.1508	0.0083	0.1107	0.0746	-0.1160	0.8788	-0.1320
α_3	-0.0349**	0.0174	-1.9999	-0.1710*	0.0320	-5.3415	-0.0589**	0.0207	-2.8393	-1.454***	0.8369	-1.7376
α_4	-0.0001**	0.0000	-2.3506	-0.0031	0.0077	-0.4019	0.0000	0.0001	0.6039	0.1013*	0.0208	4.8624
α_5	-0.0026	0.0076	-0.3446	-0.0020	0.0029	-0.7017	0.0017	0.0046	0.3745	0.2422*	0.0532	4.5524
α_6	-0.0002*****	0.0002	-1.3496	0.0013	0.0028	0.4751	-0.0005****	0.0003	-1.5639	-0.7270*	0.1402	-5.1858
α_7	-0.0158	0.0210	-0.7546	0.0042	0.0176	0.2379	-0.0192	0.0215	-0.8941	-0.7815**	0.3266	-2.3932
α_8	-0.0099	0.0091	-1.0905	0.0008	0.0062	0.1277	0.0340*	0.0096	3.5602	-0.0250	0.0471	-0.5308
α_9	0.0109	0.0214	0.5115	0.0057	0.0181	0.3133	0.0025	0.0274	0.0901	-1.2157*	0.4387	-2.7710
α_{10}	2.6657*	0.28694	9.2901	1.3958*	0.13365	10.4437	1.3872*	0.16042	8.6473	6.0391*	1.3196	4.5765
Log likelihood-1077.666				Log likelihood: : -1307.368			Log likelihood: :-1182.565			Log likelihood: -1196.189		

Note: * significant at level of significance α=1%, ** significant at α=5%, *** significant at α=10%, **** significant at α=15%, ***** significant at α=20%.

Appendix D. Statistical Analysis: Poorest Household

	INDONESIA						JAVA+BALI					
	URBAN			RURAL			URBAN			RURAL		
Parameters	**Coeff.**	**Std. Error**	**t-ratio**	**Coeff.**	**Std. Error**	**t-ratio**	**Coeff.**	**Std. Error**	**t-ratio**	**Coeff.**	**Std. Error**	**t-ratio**
x_1^o	5.4619*	1.0989	4.9705	4.8383*	1.0004	4.8363	5.7896*	1.0123	5.7194	11.882***	6.3655	1.8667
x_2^o	0.5491*	0.0378	14.538	-3.0839*	0.6914	-4.4606	-0.4745**	0.2075	-2.2864	-3.5300*	0.5175	-6.8206
x_3^o	-0.393*	0.035	-11.224	3.6266*	0.9206	3.9393	-0.7742**	0.37157	-2.0836	5.2485*	0.70611	7.4331
x_4^o	0.6176*	0.1276	4.8422	0.5949**	0.2629	2.2628	-0.0068	0.20828	-0.03246	-0.40688*	0.1278	-3.1838
x_5^o	0.0479*	0.0069	6.9284	0.012	0.0145	0.8306	0.2691*	0.05023	5.3567	0.02*****	0.01394	1.3097
x_6^o	1.8126*	0.2287	7.9254	1.038**	0.5076	2.0448	0.4715	0.68043	0.69293	0.66089*	0.20394	3.2407
x_7^o	0.0854*	0.0218	3.9253	0.2324*	0.0454	5.1227	0.1477**	0.07396	1.9976	0.1638*	0.01943	8.4312
x_8^o	0.1947*	0.0316	6.1674	1.0713*	0.3636	2.9465	0.4249*	0.0921	4.6135	1.9806*	0.30778	6.4349
x_9^o	0.4915*	0.0467	10.521	1.4991*	0.2235	6.7071	0.3484	0.30857	1.129	1.421*	0.33117	4.2909
x_{10}^o	-0.0084	0.0225	-0.3744	0.0602	0.078	0.7712	-0.1330*	0.05051	-2.6324	-0.67856*	0.08777	-7.7309
α_1	-3.1526*	0.5218	-6.0415	0.0337	1.0355	0.0326	0.3842	0.99082	0.38776	-1.919*	0.52615	-3.6473
α_2	-12.903*	0.8783	-14.691	-0.0297	1.0176	-0.0292	-0.0208	0.9912	-0.02103	-21.886*	3.0702	-7.1283
α_3	-1.2305*	0.2344	-5.2499	0.414	0.5116	0.8093	0.0021	0.37321	0.00553	1.0265***	0.55163	1.8609
α_4	-0.002*****	0.0012	-1.2406	-0.005***	0.0026	-1.8397	0.0036***	0.00196	1.8469	-0.00458*	0.0011	-4.1558
α_5	-0.0497**	0.0214	-2.3204	0.0342	0.0852	0.4014	0.9824*	0.23314	4.2137	-0.0074	0.02402	-0.30805
α_6	0.007*****	0.0053	1.4132	0.0011	0.0093	0.1139	0.0130	0.01608	0.80627	0.006****	0.00407	1.488
α_7	-1.0972*	0.142	-7.7286	0.242	0.8249	0.2934	-2.5102*	0.78178	-3.2109	-1.6724*	0.39091	-4.2784
α_8	-0.3137*	0.0881	-3.5593	0.6313	0.653	0.9669	0.1057	1.0194	0.10373	3.6912*	0.42446	8.6962
α_9	-0.1078***	0.0569	-1.8942	-0.0001	0.0014	-0.0999	0.003*****	0.00224	1.4231	0.00337*	0.00108	3.1066
α_{10}	19.849*	1.4385	13.7984	-0.3217	2.0109	-0.16	2.0369	2.3725	0.85855	21.762*	3.7904	5.74135
Log likelihood: -5443.839				Log likelihood: -1364.280			Log likelihood: -807.0223			Log likelihood: : -718.2081		

	SUMATRA						KALIMANTAN					
	URBAN			RURAL			URBAN			RURAL		
Parameters	**Coeff.**	**Std. Error**	**t-ratio**	**Coeff.**	**Std. Error**	**t-ratio**	**Coeff.**	**Std. Error**	**t-ratio**	**Coeff.**	**Std. Error**	**t-ratio**
x_1^o	7.4341*	0.9713	7.6538	7.6562*	1.1754	6.5137	6.1464*	1.0050	6.1155	7.6669*	1.0042	7.6346
x_2^o	0.9383*	0.2251	4.1687	0.9864*	0.3400	2.9010	-2.4605*	0.1654	-14.8760	0.388****	0.2669	1.4532
x_3^o	-0.1187	0.17102	-0.69387	1.5227**	0.61877	2.4608	0.29517*	0.09869	2.991	0.37376**	0.15723	2.3771
x_4^o	0.0592	0.18736	0.31598	1.2688*	0.49767	2.5495	-0.21279	0.12282	-1.7325	0.94901*	0.25622	3.7039
x_5^o	0.0549*	0.0118	4.6502	0.0176***	0.00914	1.9262	0.09878*	0.01289	7.6644	0.0097	0.04911	0.1975
x_6^o	0.5506***	0.30841	1.7851	1.3753*	0.43327	3.1741	1.5588*	0.36294	4.2948	-0.5873*	0.20784	-2.8257
x_7^o	0.4410*	0.01567	28.137	0.28774*	0.05041	5.708	0.27055*	0.02702	10.012	0.58373*	0.10799	5.4056
x_8^o	0.1995**	0.08877	2.2479	-0.2803**	0.12882	-2.176	0.41278*	0.03099	13.321	0.05305	0.06613	0.80223
x_9^o	1.2829*	0.00089	1443.2	1.1758*	0.16665	7.0551	1.4039*	0.11471	12.238	0.85133*	0.18033	4.721
x_{10}^o	0.1136*	0.03164	3.5914	0.107****	0.07276	1.471	-0.60724*	0.05513	-11.015	1.5533*	0.13076	11.879
α_1	-1.4719*	0.42625	-3.4532	-2.0719*	0.43165	-4.7999	1.1955*	0.47643	2.5093	-1.24***	0.64503	-1.922
α_2	-5.3151*	0.58705	-9.054	-7.9353*	0.8236	-9.635	6.0988*	0.46105	13.228	-4.2797*	0.3499	-12.231
α_3	-0.2759*	0.06192	-4.4553	-0.10259	0.20575	-0.4986	0.17766*	0.0704	2.5236	-0.1138**	0.05165	-2.2024
α_4	-0.0019*	0.00071	-2.6786	0.00206	0.00197	1.0428	0.00395*	0.00058	6.8392	-0.8145**	0.33746	-2.4136

α_5	-0.0113	0.01096	-1.0329	-0.015***	0.00886	-1.6371	0.03*****	0.02248	1.3385	-0.150**	0.06895	-2.1802
α_6	-0.005***	0.00258	-1.9261	0.00486	0.00422	1.1519	0.00417	0.00544	0.76601	-0.3327**	0.15289	-2.1759
α_7	-0.5336*	0.11625	-4.5901	-0.38214*	0.1179	-3.2413	0.1247**	0.06214	2.0067	-0.387**	0.15407	-2.5132
α_8	-0.12****	0.07993	-1.4727	-0.41123*	0.09884	-4.1605	0.0187	0.04327	0.43212	-0.13534*	0.04316	-3.1355
α_9	0.0004***	0.00021	1.8543	0.00045	0.00038	1.1885	0.01483	0.06449	0.2299	-0.2572**	0.11626	-2.2123
α_{10}	8.7320*	0.91306	9.56345	11.91*	1.2267	9.70898	-6.6684	8.7104	-0.76557	8.7104*	1.364	6.38592
Log likelihood: -1425.908				Log likelihood: -1577.295			Log likelihood: -1412.561			Log likelihood: : -1412.561		

	SULAWESI						**REST**					
	URBAN			**RURAL**			**URBAN**			**RURAL**		
Parameters	**Coeff.**	**Std. Error**	**t-ratio**	**Coeff.**	**Std. Error**	**t-ratio**	**Coeff.**	**Std. Error**	**t-ratio**	**Coeff.**	**Std. Error**	**t-ratio**
x_1^o	9.134****	6.3030	1.4492	7.4997*	1.1727	6.3954	6.3513*	1.0017	6.3407	8.2913*	2.6243	3.1594
x_2^o	5.6222*	0.5603	10.0350	-1.5078*	0.2977	-5.0659	0.2704	0.7225	0.3742	2.23*****	1.6355	1.3613
x_3^o	-2.1742*	0.3409	-6.3778	-0.6645*	0.0875	-7.5902	2.2349*	0.8046	2.7775	-2.7958*	0.5247	-5.3287
x_4^o	0.97109*	0.2270	4.2785	0.9528**	0.3824	2.4916	0.9611*	0.2020	4.7592	2.7083*	0.65645	4.1257
x_5^o	0.03767*	0.0108	3.4849	-0.1210*	0.0367	-3.2985	0.1755***	0.1065	1.6479	-0.97789*	0.25646	-3.8131
x_6^o	3.6321*	0.5252	6.9157	0.7391**	0.3363	2.1981	-0.8714*	0.2484	-3.5087	-0.38742	1.2821	-0.30218
x_7^o	0.70643*	0.0539	13.11	0.4990*	0.0531	9.3970	0.9115*	0.1497	6.0913	0.45*****	0.33154	1.3711
x_8^o	1.2048*	0.1292	9.3221	0.0735	0.0781	0.9408	0.8334*	0.2214	3.7636	-0.802***	0.47301	-1.6961
x_9^o	3.188*	0.3764	8.4696	1.1373*	0.2781	4.0897	0.3437*	0.1028	3.3439	2.328****	1.4826	1.5698
x_{10}^o	-2.1586*	0.2343	-9.2151	1.1843*	0.1260	9.4035	1.308****	0.8051	1.6249	1.3001***	0.76451	1.7005
α_1	-0.77306*	0.2096	-3.6884	-2.46****	1.6936	-1.4550	-0.5878*	0.1978	-2.9722	8.573*	3.3974	2.5234
α_2	-1.5326*	0.3161	-4.8487	1.4312	1.1166	1.2817	-2.0747*	0.3208	-6.4673	16.221*	5.8215	2.7864
α_3	-0.62987*	0.0947	-6.6536	12.2620*	3.9213	3.1271	-0.0634	0.2734	-0.2318	8.3215*	2.2643	3.6751
α_4	-0.00027	0.0004	-0.68284	-0.0355*	0.0136	-2.6122	-0.2311**	0.1173	-1.9709	-0.01739*	0.00475	-3.6599
α_5	-0.00867	0.0088	-0.98133	0.3916	0.7097	0.5518	-0.2*****	0.1161	-1.2845	4.0082*	1.3336	3.0056
α_6	0.0062*	0.0013	4.766	-0.0945*	0.0207	-4.5698	-0.2259**	0.1098	-2.0576	0.01651	0.01947	0.84805
α_7	-0.05****	0.0341	-1.4994	-5.8642**	2.9096	-2.0155	-0.256***	0.1416	-1.8107	2.8413**	1.379	2.0604
α_8	0.39858*	0.0305	13.058	-3.0488*	1.0759	-2.8338	0.0472	0.0928	0.5081	3.2564*	1.1061	2.9441
α_9	0.00114*	0.0001	8.0396	-0.0203*	0.0074	-2.7595	-0.089***	0.0476	-1.8739	-0.00388	0.00594	-0.65355
α_{10}	3.5896*	0.5295	6.77987	-1.5577	5.5542	-0.2805	4.6304*	0.7269	6.3699	-42.216*	11.838	-3.56614
Log likelihood: -819.5102				Log likelihood: -813.8340			Log likelihood: -1244.042			Log likelihood: -863.0851		

Note: * significant at level of significance, α=1%, ** significant at α=5%, *** significant at α=10%, **** significant at α=15%, ***** significant at α=20%.

Appendix E. Result of Data Approximation

Code	Definition
M	Total food expenditure
X1	Total Expenditure on Cereal
X2	Total Expenditure on Tubers
X3	Total Expenditure on Fish
X4	Total Expenditure on Meat
X5	Total Expenditure on Eggs and Milk
X6	Total Expenditure on Vegetables
X7	Total Expenditure on Nuts
X8	Total Expenditure on Fruits
X9	Total Expenditure on Prepared food
X10	Total Expenditure on Tobacco
P1	Average Price of Cereal
P 2	Average Price of Tubers
P 3	Average Price of Fish
P 4	Average Price of Meat
P 5	Average Price of Eggs and Milk
P 6	Average Price of Vegetables
P 7	Average Price of Nuts
P 8	Average Price of Fruits
P 9	Average Price of Prepared food
P 10	Average Price of Tobacco

1. Urban (Java+Bali)

Provinces	Year	M	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	P1	P2	P3	P4	P5	P6	P7	P8	P9
	1980	6,239.00	2,085.00	113.00	596.00	503.00	397.00	421.00	424.00	335.00	791.00	574.00	201.44	85.90	880.29	1,981.23	179.76	882.21	506.84	321.56	333.71
	1981	7,244.00	2,444.00	76.00	856.00	558.00	351.00	688.00	470.00	242.00	853.00	706.00	215.96	90.68	991.99	2,194.60	202.09	844.07	558.93	346.42	359.05
1.West Java	1984	10,049.00	3,244.00	175.00	1,060.00	1,014.00	783.00	1,097.00	626.00	247.00	723.00	1,080.00	267.50	107.82	1,394.53	2,972.08	283.00	833.90	746.33	436.90	449.35
	1987	14,450.00	3,843.00	206.00	1,183.00	1,274.00	1,060.00	1,231.00	894.00	1,001.00	2,405.00	1,353.00	328.54	127.22	1,942.61	4,041.23	394.54	1,053.53	993.37	553.87	558.80
	1990	20,167.00	5,495.00	228.00	1,832.00	1,578.00	1,600.00	1,768.00	1,104.00	1,682.00	3,126.00	1,754.00	477.98	170.87	2,649.26	5,538.32	631.35	1,505.01	1,385.90	693.73	757.46
	1993	27,614.00	5,939.00	310.00	2,452.00	2,364.00	2,162.00	2,393.00	1,422.00	1,853.00	5,847.00	2,872.00	570.02	233.86	3,099.74	7,593.51	785.83	2,016.95	1,688.13	925.22	947.60
	1980	4,837.00	1,716.00	91.00	197.00	359.00	313.00	434.00	417.00	327.00	571.00	412.00	136.69	44.71	661.70	1,648.41	166.42	486.22	431.17	278.42	247.26
	1981	6,169.00	2,419.00	66.00	344.00	399.00	273.00	652.00	497.00	317.00	631.00	571.00	157.69	51.71	763.59	1,911.32	192.16	548.51	494.82	296.94	280.02
2.Central Java	1984	9,358.00	2,666.00	153.00	477.00	698.00	614.00	1,108.00	672.00	549.00	1,587.00	834.00	222.75	73.43	1,078.65	2,736.57	272.11	755.27	689.75	343.65	377.73
	1987	11,961.00	3,419.00	171.00	523.00	1,047.00	877.00	1,283.00	871.00	683.00	1,990.00	1,097.00	317.94	105.21	1,536.96	3,970.52	389.60	1,135.30	970.17	405.64	514.10
	1990	14,988.00	4,857.00	179.00	854.00	1,141.00	1,010.00	1,600.00	1,097.00	1,212.00	1,710.00	1,328.00	424.35	125.61	1,915.16	5,119.16	629.36	1,268.57	1,267.15	596.11	685.96
	1993	21,247.00	5,105.00	204.00	1,170.00	1,626.00	1,508.00	2,261.00	1,534.00	1,331.00	4,489.00	2,019.00	470.54	133.89	2,517.36	7,183.67	757.26	1,646.65	1,531.74	858.88	803.36
	1980	5,437.00	1,461.00	68.00	98.00	376.00	445.00	419.00	410.00	338.00	1,439.00	383.00	142.10	32.51	694.84	2,105.08	172.14	528.14	428.37	297.75	309.73
	1981	6,785.00	1,933.00	74.00	187.00	635.00	436.00	708.00	596.00	403.00	1,226.00	587.00	162.66	39.20	772.86	2,346.79	195.78	577.66	480.08	307.47	334.86
3.DIY	1984	9,814.00	2,231.00	97.00	267.00	812.00	787.00	868.00	589.00	596.00	2,942.00	625.00	232.40	63.57	1,028.25	3,141.28	276.86	764.26	651.25	335.21	415.85
	1987	11,972.00	3,127.00	119.00	311.00	973.00	1,083.00	1,164.00	799.00	812.00	2,663.00	921.00	329.14	103.21	1,355.94	4,170.62	393.02	1,115.50	876.59	362.98	518.17
	1990	16,321.00	4,387.00	151.00	458.00	1,217.00	1,462.00	1,658.00	1,162.00	1,412.00	3,326.00	1,088.00	435.77	128.94	2,098.99	5,131.45	635.62	1,316.68	1,144.76	564.76	712.89
	1993	22,965.00	4,644.00	212.00	703.00	2,253.00	2,101.00	2,198.00	1,475.00	1,616.00	6,041.00	1,722.00	497.24	148.68	2,463.20	6,904.59	726.95	1,539.45	1,299.50	722.53	753.70
	1980	5,156.00	1,658.00	98.00	338.00	512.00	380.00	432.00	424.00	330.00	538.00	446.00	158.23	60.54	768.18	1,633.21	159.17	599.77	454.73	293.72	278.07
	1981	6,398.00	2,069.00	71.00	565.00	681.00	339.00	631.00	515.00	360.00	558.00	609.00	177.76	65.08	867.22	1,894.86	185.38	655.39	513.83	311.21	298.90
4.East Java	1984	9,428.00	2,539.00	144.00	592.00	791.00	539.00	991.00	691.00	542.00	1,648.00	951.00	235.48	76.86	1,161.55	2,715.68	268.45	827.06	690.39	352.72	352.78
	1987	13,181.00	3,185.00	150.00	897.00	1,336.00	1,014.00	1,194.00	947.00	739.00	2,599.00	1,120.00	310.10	90.38	1,542.38	3,863.32	386.83	1,120.41	921.39	396.64	414.18
	1990	16,281.00	4,717.00	158.00	1,113.00	1,331.00	1,148.00	1,608.00	1,231.00	1,029.00	2,683.00	1,263.00	407.18	105.28	1,958.30	4,775.91	581.24	1,228.98	1,169.82	441.66	570.73
	1993	24,086.00	5,268.00	214.00	1,662.00	2,156.00	1,809.00	2,253.00	1,634.00	1,570.00	5,454.00	2,066.00	457.51	127.25	2,270.65	6,594.76	709.62	1,597.05	1,395.07	598.22	691.01
	1980	5,208.00	2,053.00	86.00	340.00	530.00	311.00	445.00	283.00	325.00	551.00	284.00	189.25	44.22	1,505.64	1,531.33	128.58	876.16	434.09	290.85	273.97
	1981	6,338.00	2,443.00	33.00	476.00	769.00	283.00	717.00	279.00	345.00	661.00	332.00	211.18	49.43	1,597.02	1,745.22	152.41	877.75	497.76	305.59	308.37
5.Bali	1984	10,234.00	3,271.00	120.00	643.00	1,060.00	596.00	1,026.00	414.00	577.00	1,935.00	592.00	278.66	66.07	1,844.01	2,426.12	232.52	879.81	702.48	347.85	416.99
	1987	13,958.00	4,067.00	118.00	936.00	1,868.00	946.00	1,291.00	757.00	752.00	2,431.00	792.00	349.24	85.70	2,019.06	3,201.50	336.53	892.90	941.59	388.41	539.48
	1990	20,676.00	5,465.00	205.00	1,715.00	2,317.00	1,676.00	2,057.00	909.00	1,257.00	3,959.00	1,116.00	462.29	120.04	2,331.32	4,459.70	513.88	1,017.00	1,332.99	482.66	742.78
	1993	30,381.00	7,041.00	282.00	2,222.00	3,897.00	2,431.00	2,835.00	1,197.00	1,952.00	6,958.00	1,566.00	571.44	201.51	2,881.40	6,542.83	684.97	1,402.19	1,478.89	755.17	851.54

2. Urban (Sumatra)

Provinces	Year	M	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	P1	P2	P3	P4	P5	P6	P7	P8	P9
	1980	9,080.00	2,260.00	184.00	1,618.00	1,211.00	543.00	861.00	363.00	533.00	724.00	783.00	280.30	131.80	2,865.24	3,084.30	163.43	922.79	487.03	183.02	344.97
	1981	8,436.00	2,649.00	91.00	1,973.00	610.00	304.00	1,146.00	157.00	445.00	369.00	692.00	279.98	133.36	2,701.55	3,125.41	180.16	909.15	511.02	194.20	353.94
6. DI Aceh	1984	16,852.00	3,683.00	255.00	2,769.00	1,070.00	1,037.00	1,713.00	500.00	766.00	3,646.00	1,413.00	326.24	161.08	2,655.33	3,776.69	269.33	1,018.04	675.01	265.76	447.12
	1987	17,614.00	4,626.00	222.00	3,215.00	1,251.00	1,145.00	1,656.00	511.00	1,177.00	2,273.00	1,538.00	391.73	201.19	2,657.36	4,673.05	414.61	1,169.09	910.46	377.69	595.32
	1990	20,138.00	6,220.00	288.00	4,704.00	826.00	975.00	1,822.00	460.00	1,041.00	1,435.00	2,367.00	471.70	253.05	2,635.22	5,761.39	638.74	1,339.66	1,220.54	541.02	809.30
	1993	31,124.00	6,587.00	296.00	5,632.00	2,125.00	2,416.00	2,860.00	928.00	2,099.00	4,825.00	3,356.00	508.70	272.64	3,507.42	6,965.07	742.23	1,533.69	1,367.40	672.68	947.19
	1980	7,038.00	2,272.00	88.00	1,080.00	392.00	386.00	926.00	207.00	280.00	738.00	669.00	248.96	58.90	1,836.68	2,206.74	158.50	728.08	441.59	258.47	296.68
	1981	7,775.00	2,482.00	69.00	1,425.00	458.00	279.00	1,103.00	180.00	370.00	618.00	791.00	265.96	67.16	1,956.70	2,449.09	183.73	766.92	492.20	279.13	327.89
7. North Sumatra	1984	12,024.00	3,291.00	152.00	2,000.00	728.00	632.00	1,487.00	271.00	442.00	1,805.00	1,216.00	326.30	97.25	2,382.85	3,315.19	277.27	910.37	674.43	356.32	442.83
	1987	17,530.00	4,351.00	194.00	3,924.00	877.00	951.00	1,683.00	388.00	1,091.00	2,560.00	1,511.00	396.69	139.83	2,875.44	4,446.80	417.52	1,085.74	919.16	464.16	604.43
	1990	18,250.00	5,703.00	167.00	3,229.00	1,130.00	1,189.00	1,870.00	529.00	889.00	1,746.00	1,798.00	486.47	203.20	3,500.03	6,016.54	638.19	1,325.28	1,268.42	627.90	846.94
	1993	26,683.00	6,507.00	276.00	4,320.00	1,369.00	1,803.00	2,980.00	647.00	1,463.00	4,239.00	3,079.00	540.84	246.00	3,820.36	7,630.56	765.21	1,617.57	1,451.01	825.00	983.69
	1980	8,564.00	2,484.00	156.00	919.00	749.00	567.00	1,088.00	274.00	493.00	1,082.00	752.00	238.21	91.46	1,549.04	3,162.19	160.53	301.47	635.65	227.29	462.51
	1981	9,701.00	2,812.00	135.00	1,154.00	909.00	607.00	1,341.00	255.00	487.00	1,207.00	794.00	259.36	99.91	1,721.88	3,377.49	187.07	336.72	698.95	249.25	486.91
8. West Sumatra	1984	14,910.00	3,721.00	211.00	1,699.00	1,158.00	908.00	1,838.00	359.00	601.00	2,963.00	1,452.00	316.23	122.91	2,215.32	3,913.99	273.04	445.20	874.53	310.23	547.71
	1987	18,827.00	5,052.00	294.00	2,163.00	1,188.00	1,179.00	1,951.00	453.00	1,349.00	3,303.00	1,895.00	389.27	152.79	2,874.94	4,592.25	410.42	644.78	1,104.42	391.57	642.32
	1990	23,776.00	6,075.00	442.00	3,512.00	1,764.00	1,927.00	2,485.00	704.00	1,396.00	3,549.00	1,922.00	475.39	188.56	3,697.96	5,361.00	622.56	1,362.22	1,383.28	492.48	771.03
	1993	31,017.00	6,621.00	414.00	3,444.00	2,391.00	2,483.00	3,332.00	686.00	1,735.00	7,225.00	2,686.00	557.53	238.44	4,050.66	7,180.62	748.03	1,703.10	1,650.89	817.44	882.59
	1980	7,699.00	2,070.00	153.00	1,401.00	452.00	519.00	1,108.00	267.00	337.00	692.00	700.00	248.02	76.55	1,723.64	2,733.28	162.41	524.14	548.42	247.29	386.50
	1981	9,371.00	2,688.00	137.00	1,977.00	708.00	431.00	1,357.00	231.00	483.00	459.00	900.00	267.45	84.90	1,873.66	2,961.77	188.74	563.79	605.41	269.11	414.04
9. Riau	1984	14,933.00	3,900.00	281.00	2,808.00	1,112.00	906.00	1,860.00	376.00	651.00	1,648.00	1,391.00	328.43	112.47	2,350.60	3,693.63	281.28	693.92	791.25	340.79	506.05
	1987	17,759.00	4,203.00	303.00	2,936.00	1,303.00	1,260.00	2,255.00	511.00	1,252.00	1,814.00	1,922.00	399.94	148.83	2,925.86	4,598.52	421.30	882.48	1,028.80	435.73	634.19
	1990	24,435.00	5,856.00	435.00	5,198.00	2,155.00	1,838.00	2,381.00	765.00	1,133.00	2,215.00	2,459.00	483.04	196.77	3,614.21	5,714.93	633.15	1,349.51	1,331.36	562.92	812.67
	1993	32,286.00	7,006.00	472.00	6,190.00	2,544.00	2,723.00	3,292.00	949.00	1,471.00	3,567.00	4,072.00	520.78	229.69	3,731.95	7,022.54	717.49	1,574.46	1,470.73	778.74	884.88
	1980	7,837.00	2,141.00	177.00	1,175.00	614.00	573.00	1,186.00	339.00	416.00	435.00	781.00	228.28	88.68	1,476.43	3,245.43	223.03	657.60	599.38	278.59	437.83
	1981	8,863.00	2,396.00	134.00	1,763.00	603.00	355.00	1,520.00	382.00	384.00	328.00	998.00	248.61	97.80	1,639.04	3,475.44	247.30	702.42	662.31	300.36	466.37
10. Jambi	1984	13,001.00	3,393.00	228.00	2,049.00	811.00	763.00	1,971.00	421.00	668.00	1,318.00	1,379.00	304.89	123.58	2,104.87	4,062.45	320.22	823.97	840.64	358.60	541.92
	1987	15,755.00	3,606.00	307.00	2,200.00	1,011.00	1,131.00	1,972.00	665.00	1,628.00	1,606.00	1,629.00	376.16	155.43	2,683.31	4,731.37	423.93	1,005.50	1,060.06	429.88	642.49
	1990	20,283.00	5,690.00	333.00	3,378.00	1,513.00	1,470.00	2,217.00	612.00	1,345.00	1,560.00	2,165.00	450.24	186.17	3,247.94	5,253.41	548.93	1,400.56	1,270.53	495.28	742.69
	1993	25,134.00	6,021.00	367.00	3,758.00	2,062.00	1,867.00	3,474.00	865.00	1,216.00	2,734.00	2,770.00	509.70	236.53	3,511.55	6,884.73	699.29	1,852.74	1,521.86	703.03	870.01
	1980	7,149.00	2,410.00	141.00	988.00	440.00	520.00	684.00	323.00	375.00	437.00	831.00	193.25	96.53	1,118.41	3,796.20	346.33	1,154.36	602.33	359.03	456.37
	1981	8,033.00	2,426.00	109.00	1,222.00	582.00	412.00	1,130.00	302.00	500.00	453.00	897.00	209.13	105.31	1,253.09	3,978.46	360.85	1,198.08	658.82	374.51	481.93
11. South Sumatra	1984	12,536.00	3,282.00	198.00	1,868.00	755.00	881.00	1,391.00	362.00	760.00	1,628.00	1,411.00	258.76	131.11	1,669.44	4,443.70	396.66	1,314.95	826.04	413.59	553.06
	1987	15,897.00	3,881.00	249.00	2,278.00	1,027.00	1,397.00	1,741.00	536.00	1,313.00	1,759.00	1,716.00	318.51	154.90	2,109.10	4,706.67	413.93	1,406.90	983.70	435.19	611.97
	1990	20,703.00	5,385.00	351.00	3,127.00	1,800.00	2,010.00	2,358.00	955.00	1,342.00	1,668.00	1,707.00	441.87	193.11	2,809.87	5,257.18	456.04	1,630.22	1,237.36	485.04	726.29
	1993	26,266.00	5,831.00	438.00	3,474.00	1,980.00	2,536.00	2,803.00	1,131.00	1,402.00	4,069.00	2,602.00	488.34	258.40	3,015.40	6,946.47	683.24	2,411.82	1,557.17	565.27	904.36
	1980	8,153.00	2,654.00	191.00	1,015.00	709.00	518.00	899.00	305.00	344.00	583.00	935.00	195.51	88.72	1,360.60	3,453.13	261.09	837.00	655.82	314.46	444.71
	1981	8,321.00	2,775.00	120.00	1,302.00	568.00	351.00	1,141.00	224.00	319.00	613.00	908.00	212.10	95.37	1,480.93	3,613.87	279.18	859.84	706.39	325.53	464.02
12. Bengkulu	1984	11,809.00	3,834.00	233.00	1,402.00	774.00	754.00	1,348.00	273.00	437.00	1,221.00	1,533.00	254.77	111.03	1,778.32	3,909.65	322.45	893.72	825.79	343.63	502.81
	1987	16,862.00	4,742.00	151.00	1,982.00	1,514.00	1,336.00	2,017.00	492.00	1,053.00	1,780.00	1,795.00	332.13	137.15	2,256.39	4,473.77	402.19	1,026.94	1,021.24	389.71	592.00
	1990	20,690.00	6,962.00	283.00	2,336.00	1,463.00	1,610.00	2,372.00	617.00	1,141.00	2,041.00	1,865.00	458.53	173.49	2,920.69	5,229.06	524.73	1,398.86	1,289.94	457.83	730.42
	1993	26,618.00	6,460.00	372.00	3,368.00	2,220.00	2,609.00	2,978.00	779.00	1,608.00	3,298.00	2,926.00	496.08	218.54	3,248.58	6,879.84	675.43	1,909.93	1,558.90	627.93	864.78
	1980	6,076.00	2,360.00	135.00	537.00	401.00	288.00	575.00	239.00	302.00	256.00	983.00	101.54	70.02	1,165.11	3,317.06	296.80	1,190.62	730.11	370.01	381.31
	1981	6,731.00	2,517.00	57.00	687.00	326.00	288.00	967.00	301.00	283.00	287.00	1,018.00	113.66	70.21	1,170.16	3,293.58	296.49	1,122.77	734.69	347.53	378.78
13. Lampung	1984	9,161.00	3,195.00	134.00	745.00	436.00	627.00	1,214.00	411.00	583.00	590.00	1,226.00	176.74	82.96	1,377.67	3,762.35	344.23	1,113.21	871.38	340.28	439.73
	1987	14,416.00	4,194.00	157.00	1,218.00	1,113.00	1,064.00	1,652.00	664.00	969.00	1,558.00	1,827.00	286.07	101.98	1,651.47	4,387.52	407.52	1,151.17	1,058.54	347.67	542.07
	1990	16,118.00	6,083.00	248.00	1,421.00	847.00	1,115.00	1,648.00	801.00	1,134.00	951.00	1,870.00	470.94	126.84	1,961.70	5,083.41	478.83	1,204.98	1,282.05	360.89	687.62

	1993	22,028.00	5,485.00	192.00	2,011.00	1,283.00	1,680.00	2,592.00	1,060.00	1,002.00	3,578.00	3,145.00	432.42	140.67	2,441.22	6,557.49	575.32	1,673.13	1,519.37	430.38	807.25

3. Urban (Kalimantan)

Provinces	Year	M	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	P1	P2	P3	P4	P5	P6	P7	P8	P9
	1980	7,924.00	2,083.00	147.00	1,464.00	618.00	510.00	799.00	328.00	682.00	467.00	826.00	222.46	93.24	1,635.95	3,105.59	239.36	1,415.74	751.05	505.26	383.78
	1981	8,115.00	2,466.00	92.00	1,521.00	617.00	413.00	990.00	307.00	365.00	451.00	893.00	249.44	109.16	1,762.27	3,421.73	277.62	1,493.68	839.11	519.09	431.53
16.West Kalimantan	1984	12,307.00	3,195.00	211.00	2,154.00	1,333.00	996.00	1,208.00	458.00	643.00	830.00	1,279.00	340.51	165.12	2,163.05	4,453.29	410.59	1,752.86	1,134.23	565.84	591.97
	1987	17,155.00	4,048.00	183.00	2,626.00	1,448.00	1,341.00	1,302.00	481.00	1,637.00	2,324.00	1,765.00	467.22	249.47	2,649.37	5,776.40	606.20	2,120.69	1,536.47	639.17	811.67
	1990	20,347.00	5,697.00	258.00	2,990.00	1,735.00	1,533.00	1,981.00	550.00	1,609.00	2,122.00	1,872.00	640.21	372.89	3,199.62	7,290.38	914.85	2,506.44	2,056.29	784.94	1,128.56
	1993	29,316.00	6,166.00	386.00	4,781.00	2,886.00	2,406.00	2,508.00	921.00	1,907.00	4,302.00	3,053.00	694.67	467.68	4,049.48	10,070.92	1,074.79	2,964.74	2,325.69	1,000.86	1,382.77
	1980	9,604.00	2,559.00	151.00	2,192.00	714.00	752.00	892.00	351.00	733.00	382.00	878.00	159.92	54.70	952.02	1,979.53	164.88	789.27	471.77	277.70	271.48
	1981	10,998.00	2,636.00	169.00	2,681.00	718.00	547.00	1,389.00	312.00	650.00	713.00	1,183.00	180.11	62.34	1,047.28	2,239.05	191.70	857.38	537.34	296.35	301.89
17. Central Kalimantan	1984	15,493.00	3,351.00	94.00	3,316.00	1,093.00	1,231.00	1,671.00	527.00	1,045.00	1,757.00	1,408.00	240.55	86.01	1,317.84	3,023.03	276.72	1,056.05	736.78	344.54	390.26
	1987	18,769.00	4,543.00	196.00	3,599.00	1,486.00	1,618.00	1,698.00	432.00	2,004.00	1,678.00	1,515.00	321.05	119.44	1,660.11	4,078.03	398.38	1,355.73	1,004.83	404.51	503.61
	1990	23,578.00	5,749.00	252.00	4,424.00	1,588.00	1,659.00	2,330.00	768.00	2,376.00	2,523.00	1,909.00	405.90	153.31	1,926.66	4,914.40	587.67	1,470.11	1,270.12	507.98	653.41
	1993	33,098.00	6,512.00	323.00	6,414.00	3,122.00	2,698.00	3,649.00	1,155.00	2,558.00	4,041.00	2,626.00	458.68	179.25	2,472.43	7,030.76	717.67	1,891.68	1,510.71	689.61	798.37
	1980	9,431.00	2,201.00	100.00	2,304.00	735.00	623.00	718.00	318.00	849.00	724.00	859.00	184.32	58.64	1,433.05	2,658.24	167.41	1,291.01	526.80	257.86	287.36
	1981	9,101.00	2,622.00	59.00	2,183.00	596.00	481.00	863.00	195.00	428.00	752.00	922.00	202.39	69.43	1,503.55	2,884.64	194.09	1,365.33	595.24	275.32	322.03
18. South Kalimantan	1984	14,444.00	3,552.00	137.00	2,942.00	716.00	817.00	1,144.00	277.00	971.00	2,576.00	1,312.00	257.50	105.80	1,684.67	3,544.18	282.38	1,565.76	811.89	328.14	430.22
	1987	18,559.00	4,143.00	135.00	4,246.00	729.00	999.00	1,456.00	274.00	1,797.00	3,138.00	1,642.00	315.15	153.44	1,789.98	4,139.92	393.84	1,708.41	1,056.85	386.65	548.17
	1990	22,210.00	4,942.00	140.00	4,361.00	1,111.00	1,395.00	1,758.00	422.00	2,055.00	4,069.00	1,957.00	408.12	235.54	2,005.60	5,112.90	584.97	1,978.40	1,438.93	516.99	739.04
	1993	30,751.00	5,841.00	223.00	5,822.00	1,295.00	2,240.00	2,476.00	742.00	2,448.00	6,925.00	2,739.00	480.91	288.69	2,809.67	7,825.16	738.49	2,562.28	1,715.16	668.08	959.42
	1980	8,312.00	1,861.00	168.00	1,328.00	653.00	728.00	806.00	415.00	495.00	899.00	959.00	296.64	136.98	2,411.46	4,400.93	326.56	2,122.37	1,071.46	761.53	516.29
	1981	10,177.00	2,487.00	132.00	2,367.00	784.00	574.00	1,375.00	357.00	533.00	551.00	1,017.00	330.45	161.23	2,561.72	4,766.62	376.62	2,201.82	1,180.77	766.82	581.45
19. East Kalimantan	1984	16,048.00	3,079.00	361.00	2,086.00	1,531.00	1,614.00	1,857.00	586.00	669.00	2,379.00	1,886.00	423.31	234.31	2,888.33	5,652.66	523.07	2,351.88	1,471.17	755.75	762.39
	1987	20,442.00	3,825.00	316.00	3,870.00	1,361.00	1,623.00	2,231.00	832.00	1,951.00	2,374.00	2,059.00	581.67	359.88	3,450.44	7,088.15	771.93	2,736.40	1,961.14	828.63	1,061.81
	1990	24,039.00	6,152.00	388.00	3,693.00	1,447.00	2,088.00	2,653.00	994.00	2,120.00	2,153.00	2,351.00	822.99	563.97	4,216.89	9,074.23	1,168.26	3,343.19	2,677.54	998.54	1,514.00
	1993	34,299.00	6,001.00	525.00	5,312.00	3,097.00	3,459.00	3,663.00	1,290.00	2,785.00	5,259.00	2,908.00	956.04	776.73	5,779.97	13,468.65	1,470.97	4,147.93	3,226.32	1,347.88	2,020.81

4. Urban (Sulawesi)

Provinces	Year	M	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	P1	P2	P3	P4	P5	P6	P7	P8	P9
	1980	7,223.00	2,165.00	129.00	1,409.00	413.00	430.00	665.00	233.00	504.00	616.00	659.00	217.52	182.44	1,244.66	2,083.51	188.90	1,018.56	548.64	343.79	298.29
	1981	9,345.00	3,024.00	137.00	1,733.00	516.00	334.00	1,293.00	112.00	457.00	837.00	902.00	220.65	171.42	1,267.75	2,095.97	203.04	971.68	563.73	337.08	307.56
20. North Sulawesi	1984	13,108.00	3,645.00	328.00	2,069.00	928.00	846.00	1,145.00	350.00	643.00	1,822.00	1,332.00	266.87	169.45	1,549.61	2,478.63	286.15	1,013.58	705.59	372.60	389.69
	1987	14,458.00	4,114.00	236.00	2,235.00	1,040.00	1,129.00	1,251.00	400.00	791.00	1,830.00	1,432.00	328.78	179.42	1,928.56	2,984.53	416.56	1,155.22	901.12	422.97	507.72
	1990	18,805.00	5,825.00	276.00	3,018.00	1,094.00	1,457.00	1,817.00	490.00	971.00	1,975.00	1,882.00	401.53	198.38	2,378.38	3,561.13	608.10	1,402.38	1,142.86	488.65	660.57
	1993	27,749.00	7,912.00	283.00	4,752.00	1,664.00	2,080.00	2,326.00	541.00	1,612.00	3,516.00	3,063.00	514.06	236.09	3,127.32	4,785.28	792.54	1,850.99	1,260.67	688.87	838.46
	1980	7,266.00	2,180.00	131.00	1,208.00	622.00	496.00	716.00	260.00	463.00	379.00	811.00	155.63	123.40	1,048.14	1,803.19	164.33	871.79	516.20	400.75	248.79
	1981	8,290.00	2,682.00	112.00	1,752.00	674.00	311.00	1,052.00	121.00	412.00	330.00	844.00	171.05	129.24	1,135.59	1,940.30	188.06	882.45	559.49	401.58	276.78
21. Central Sulawesi	1984	10,675.00	3,029.00	215.00	1,946.00	691.00	854.00	1,153.00	314.00	615.00	815.00	1,043.00	227.06	154.48	1,446.02	2,428.58	275.65	957.44	716.22	416.02	378.82
	1987	14,552.00	3,609.00	217.00	2,747.00	1,204.00	1,080.00	1,327.00	442.00	1,253.00	1,317.00	1,356.00	302.75	196.54	1,825.76	3,019.91	404.34	1,110.78	919.06	440.39	519.95
	1990	17,962.00	5,496.00	221.00	3,421.00	1,145.00	1,400.00	1,939.00	644.00	806.00	1,165.00	1,725.00	413.50	267.36	2,326.78	3,798.07	603.43	1,395.81	1,204.01	491.05	727.09
	1993	22,482.00	5,601.00	560.00	4,682.00	1,663.00	1,897.00	2,439.00	640.00	1,215.00	3,203.00	582.00	500.94	368.24	3,088.96	5,274.24	772.30	1,735.67	1,403.60	693.29	963.27
	1980	6,069.00	2,242.00	67.00	1,196.00	314.00	342.00	444.00	136.00	369.00	331.00	628.00	105.00	73.80	915.99	1,630.63	149.53	777.71	512.14	475.49	214.72
	1981	6,727.00	2,250.00	88.00	1,759.00	295.00	254.00	610.00	114.00	314.00	345.00	698.00	123.65	88.63	1,021.67	1,817.08	176.24	807.64	565.34	474.55	250.48
22. South Sulawesi	1984	9,970.00	2,989.00	98.00	2,184.00	412.00	688.00	772.00	231.00	458.00	1,074.00	1,064.00	184.02	137.64	1,326.00	2,354.30	262.26	890.76	720.40	456.71	364.09
	1987	12,218.00	3,447.00	147.00	2,687.00	378.00	962.00	1,070.00	324.00	787.00	1,209.00	1,207.00	278.63	215.81	1,735.94	3,082.24	395.27	1,074.71	945.39	462.07	536.98
	1990	17,917.00	5,097.00	197.00	4,242.00	573.00	1,263.00	1,509.00	476.00	1,044.00	2,089.00	1,427.00	422.00	335.72	2,252.50	4,006.52	593.11	1,376.27	1,255.75	489.01	788.72
	1993	21,624.00	5,698.00	228.00	5,170.00	624.00	1,655.00	1,875.00	543.00	1,089.00	2,491.00	2,251.00	483.34	498.35	3,023.41	5,721.59	745.16	1,604.26	1,535.56	691.72	1,080.78
	1980	6,038.00	1,887.00	116.00	1,191.00	291.00	471.00	516.00	159.00	485.00	290.00	632.00	165.92	101.43	1,078.37	1,798.19	155.34	786.36	589.34	408.03	291.15
	1981	6,910.00	2,269.00	77.00	1,495.00	513.00	320.00	715.00	80.00	365.00	347.00	729.00	182.01	109.48	1,172.54	1,969.49	181.54	803.04	635.48	411.81	319.18
23. South-East Sulawesi	1984	10,334.00	2,547.00	193.00	1,929.00	865.00	785.00	993.00	282.00	623.00	1,082.00	1,035.00	235.56	137.91	1,472.35	2,521.28	273.46	872.50	785.18	424.21	414.53
	1987	12,676.00	4,148.00	144.00	2,241.00	574.00	977.00	1,060.00	252.00	934.00	1,191.00	1,155.00	308.51	182.37	1,835.36	3,206.99	411.49	1,018.55	978.02	446.65	550.41
	1990	16,794.00	5,018.00	284.00	3,284.00	934.00	1,274.00	1,693.00	523.00	1,086.00	1,547.00	1,151.00	409.34	250.32	2,271.71	4,054.12	618.32	1,269.25	1,228.93	487.11	742.64
	1993	23,691.00	6,459.00	408.00	4,952.00	978.00	2,353.00	2,292.00	624.00	1,295.00	2,319.00	2,011.00	464.93	334.29	2,997.45	5,256.37	738.02	1,511.09	1,368.26	644.35	922.35

5. Urban (Rest of Indonesia)

Provinces	Year	M	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	P1	P2	P3	P4	P5	P6	P7	P8	P9
	1980	5,737.00	1,517.00	176.00	389.00	394.00	533.00	773.00	255.00	242.00	892.00	566.00	176.30	117.41	1,112.89	1,857.32	162.19	833.14	582.58	396.32	293.12
	1981	9,608.00	2,374.00	222.00	1,703.00	420.00	351.00	1,489.00	176.00	541.00	1,113.00	1,219.00	194.32	124.97	1,219.71	2,041.73	190.26	856.97	635.25	405.76	324.18
24. Maluku	1984	11,511.00	2,832.00	596.00	1,630.00	630.00	875.00	1,539.00	390.00	438.00	1,458.00	1,123.00	246.37	147.03	1,514.95	2,557.33	281.02	917.84	782.42	420.90	416.70
	1987	16,450.00	3,297.00	682.00	2,404.00	716.00	1,491.00	1,974.00	583.00	1,074.00	2,743.00	1,486.00	314.91	183.06	1,867.77	3,183.82	415.48	1,054.14	969.07	444.94	545.50
	1990	18,349.00	5,159.00	424.00	3,003.00	712.00	1,076.00	2,014.00	462.00	801.00	2,994.00	1,704.00	388.70	228.52	2,186.41	3,768.86	587.46	1,235.91	1,154.80	464.67	691.99
	1993	27,120.00	6,260.00	873.00	4,337.00	1,298.00	1,889.00	2,798.00	786.00	1,251.00	4,768.00	2,860.00	470.28	312.60	2,996.23	5,120.54	742.03	1,562.97	1,335.78	647.26	898.28
	1980	7,338.00	1,326.00	156.00	1,238.00	476.00	686.00	997.00	362.00	374.00	941.00	782.00	172.17	107.22	1,112.32	1,855.13	160.62	815.51	602.68	415.83	298.82
	1981	11,195.00	2,460.00	383.00	2,267.00	735.00	632.00	1,970.00	350.00	620.00	774.00	1,004.00	188.67	115.12	1,209.00	2,029.32	187.47	832.37	650.03	420.06	327.52
25. Irian Jaya	1984	15,732.00	2,982.00	470.00	1,941.00	1,503.00	1,392.00	1,835.00	600.00	924.00	2,761.00	1,324.00	239.36	140.70	1,491.11	2,546.03	276.87	887.63	790.09	426.50	417.85
	1987	18,191.00	4,103.00	854.00	2,648.00	1,131.00	1,601.00	2,247.00	769.00	1,342.00	1,878.00	1,618.00	293.77	173.07	1,746.57	3,036.72	390.96	972.62	925.74	423.22	521.01
	1990	19,881.00	5,553.00	685.00	2,572.00	1,008.00	2,257.00	2,413.00	787.00	1,431.00	1,931.00	1,244.00	388.27	235.60	2,160.65	3,829.31	586.57	1,210.06	1,163.25	462.47	701.78
	1993	29,038.00	6,673.00	1,008.00	3,990.00	2,184.00	3,027.00	3,729.00	1,109.00	1,818.00	3,080.00	2,420.00	474.47	335.95	3,051.70	5,324.28	752.26	1,549.13	1,386.52	656.66	934.22
	1980	5,783.00	1,921.00	148.00	581.00	801.00	434.00	663.00	244.00	280.00	321.00	390.00	228.24	101.65	1,213.21	1,864.42	143.85	667.43	708.12	326.00	394.35
	1981	7,155.00	2,748.00	83.00	805.00	968.00	227.00	918.00	126.00	321.00	268.00	691.00	239.03	103.42	1,285.20	2,026.69	169.02	669.48	741.08	334.99	409.34
14. NTT	1984	10,355.00	3,481.00	172.00	1,038.00	1,412.00	823.00	1,160.00	338.00	520.00	567.00	844.00	278.80	112.05	1,541.52	2,604.47	263.37	708.88	863.83	370.73	471.46
	1987	14,076.00	4,517.00	241.00	1,590.00	1,814.00	1,041.00	1,605.00	528.00	721.00	971.00	1,048.00	325.06	124.35	1,832.16	3,323.61	409.80	809.83	1,010.17	410.89	560.94
	1990	17,701.00	6,172.00	448.00	1,938.00	1,817.00	1,476.00	1,770.00	603.00	689.00	1,590.00	1,198.00	385.56	144.30	2,196.52	4,287.45	647.55	1,014.70	1,206.08	472.91	699.69
	1993	22,313.00	7,147.00	402.00	2,520.00	2,028.00	1,666.00	2,639.00	868.00	1,068.00	2,319.00	1,656.00	486.57	190.99	3,370.46	5,633.41	817.38	1,440.59	1,389.50	653.46	873.94
	1980	5,227.00	2,134.00	45.00	477.00	531.00	245.00	438.00	268.00	288.00	322.00	479.00	228.24	101.65	1,213.21	1,864.42	143.85	667.43	708.12	326.00	394.35
	1981	5,661.00	2,328.00	30.00	490.00	596.00	228.00	527.00	291.00	291.00	318.00	562.00	243.38	105.31	1,308.57	2,063.54	172.10	681.66	754.56	341.08	416.79
15. NTB	1984	8,324.00	3,460.00	53.00	773.00	576.00	357.00	776.00	328.00	388.00	941.00	672.00	281.29	113.05	1,555.29	2,627.72	265.73	715.21	871.55	374.04	475.67
	1987	11,049.00	3,937.00	76.00	1,000.00	965.00	465.00	892.00	576.00	675.00	1,406.00	1,057.00	330.81	126.55	1,864.59	3,382.44	417.05	824.16	1,028.05	418.16	570.87
	1990	17,135.00	5,487.00	158.00	1,786.00	1,521.00	1,182.00	1,833.00	978.00	1,190.00	1,719.00	1,281.00	388.91	145.55	2,215.62	4,324.74	653.18	1,023.52	1,216.57	477.02	705.77
	1993	22,917.00	6,369.00	215.00	2,158.00	1,871.00	1,367.00	1,994.00	1,040.00	1,369.00	4,627.00	1,907.00	486.57	190.99	3,370.46	5,633.41	817.38	1,440.59	1,389.50	653.46	873.94

6. Rural (Java+Bali)

Provinces	Year	M	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	P1	P2	P3	P4	P5	P6	P7	P8	P9
	1980	4,923.00	2,391.00	118.00	545.00	208.00	121.00	318.00	208.00	247.00	342.00	425.00	183.12	78.09	800.26	1,801.11	163.42	802.01	460.76	292.33	303.37
	1981	5,723.00	2,649.00	67.00	796.00	143.00	132.00	524.00	216.00	205.00	448.00	543.00	196.33	82.44	901.81	1,995.09	183.72	767.34	508.12	314.92	326.41
1.West Java	1984	9,104.00	3,833.00	168.00	991.00	325.00	282.00	865.00	354.00	513.00	923.00	850.00	238.84	96.27	1,245.12	2,653.65	252.68	744.55	666.37	390.09	401.21
	1987	11,843.00	4,446.00	161.00	1,157.00	473.00	502.00	1,059.00	518.00	719.00	1,745.00	1,063.00	290.74	112.59	1,719.12	3,576.31	349.15	932.33	879.09	490.15	494.51
	1990	16,091.00	6,460.00	239.00	1,701.00	774.00	684.00	1,478.00	736.00	1,159.00	1,362.00	1,498.00	415.64	148.58	2,303.70	4,815.93	549.00	1,308.70	1,205.13	603.25	658.66
	1993	20,956.00	6,766.00	301.00	2,149.00	1,114.00	1,024.00	1,870.00	919.00	1,182.00	3,286.00	2,345.00	491.40	201.60	2,672.19	6,546.13	677.44	1,738.75	1,455.29	797.60	816.89
	1980	3,879.00	1,553.00	152.00	148.00	107.00	86.00	326.00	246.00	147.00	280.00	834.00	124.26	40.65	601.55	1,498.55	151.29	442.02	391.97	253.11	224.78
	1981	4,007.00	1,900.00	111.00	228.00	124.00	78.00	495.00	312.00	155.00	299.00	305.00	140.79	46.17	681.77	1,706.54	171.57	489.74	441.81	265.13	250.02
2.Central Java	1984	5,580.00	2,459.00	154.00	254.00	165.00	157.00	694.00	410.00	226.00	643.00	418.00	197.12	64.99	954.56	2,421.75	240.81	668.38	610.40	304.12	334.28
	1987	8,576.00	3,394.00	252.00	451.00	293.00	335.00	1,051.00	642.00	449.00	928.00	781.00	276.47	91.49	1,336.49	3,452.63	338.78	987.22	843.63	352.73	447.04
	1990	11,483.00	4,765.00	251.00	584.00	478.00	455.00	1,411.00	938.00	761.00	841.00	999.00	365.82	108.29	1,651.00	4,413.07	542.55	1,093.59	1,092.37	513.89	591.34
	1993	14,683.00	4,932.00	250.00	721.00	550.00	688.00	1,872.00	1,142.00	787.00	2,271.00	1,470.00	405.64	115.43	2,170.14	6,192.82	652.81	1,419.53	1,320.47	740.42	692.55
	1980	3,203.00	1,297.00	165.00	36.00	102.00	138.00	340.00	322.00	136.00	424.00	243.00	126.87	29.02	620.39	1,879.54	153.70	471.56	382.48	265.85	276.54
	1981	3,999.00	1,495.00	166.00	77.00	116.00	135.00	555.00	462.00	171.00	475.00	347.00	143.95	34.69	683.94	2,076.81	173.26	511.20	424.85	272.10	296.33
3.DIY	1984	6,265.00	2,187.00	195.00	105.00	237.00	297.00	788.00	610.00	355.00	1,077.00	414.00	202.09	55.28	894.13	2,731.55	240.75	664.58	566.31	291.49	361.61
	1987	9,276.00	2,894.00	224.00	145.00	509.00	583.00	1,162.00	887.00	566.00	1,647.00	659.00	283.75	88.97	1,168.91	3,595.37	338.81	961.64	755.68	312.91	446.70
	1990	11,772.00	4,038.00	338.00	224.00	516.00	635.00	1,537.00	1,315.00	847.00	1,523.00	799.00	375.67	111.16	1,809.47	4,423.66	547.95	1,135.07	986.86	486.87	614.56
	1993	16,866.00	4,370.00	320.00	400.00	1,107.00	1,063.00	2,181.00	1,551.00	1,032.00	3,600.00	1,242.00	452.04	135.16	2,239.27	6,276.90	660.87	1,399.50	1,181.37	656.85	685.18
	1980	3,246.00	1,453.00	127.00	213.00	132.00	87.00	313.00	233.00	141.00	189.00	358.00	140.02	53.57	679.81	1,445.32	140.86	530.77	402.42	259.93	246.08
	1981	3,909.00	1,809.00	103.00	320.00	95.00	72.00	442.00	292.00	131.00	227.00	418.00	154.58	56.59	754.10	1,647.71	161.20	569.90	446.81	270.61	259.91
4.East Java	1984	5,994.00	2,357.00	166.00	417.00	159.00	187.00	668.00	410.00	263.00	747.00	620.00	203.00	66.26	1,001.34	2,341.11	231.43	712.99	595.16	304.07	304.12
	1987	8,108.00	3,059.00	184.00	528.00	238.00	300.00	953.00	612.00	384.00	985.00	865.00	267.33	77.92	1,329.64	3,330.45	333.47	965.87	794.30	341.93	357.05
	1990	11,421.00	4,623.00	253.00	852.00	366.00	406.00	1,360.00	806.00	586.00	1,080.00	1,089.00	370.17	95.71	1,780.27	4,341.74	528.40	1,117.25	1,063.48	401.51	518.85
	1993	15,039.00	5,178.00	307.00	1,142.00	547.00	568.00	1,822.00	1,078.00	699.00	2,080.00	1,618.00	415.92	115.68	2,064.23	5,995.24	645.11	1,451.86	1,268.25	543.84	628.19
	1980	3,858.00	1,847.00	145.00	254.00	172.00	126.00	369.00	139.00	147.00	386.00	273.00	164.57	38.45	1,309.25	1,331.59	111.81	761.87	377.47	252.92	238.24
	1981	4,931.00	2,290.00	112.00	411.00	325.00	155.00	556.00	176.00	198.00	386.00	322.00	182.05	42.61	1,376.74	1,504.50	131.39	756.68	429.10	263.44	265.83
5.Bali	1984	7,134.00	3,062.00	172.00	598.00	401.00	303.00	770.00	294.00	378.00	734.00	422.00	240.23	56.96	1,589.66	2,091.48	200.45	758.46	605.59	299.87	359.47
	1987	9,589.00	4,085.00	225.00	651.00	719.00	484.00	821.00	402.00	541.00	1,069.00	592.00	317.50	77.91	1,835.51	2,910.46	305.94	811.73	856.00	353.10	490.44
	1990	15,163.00	5,890.00	325.00	1,313.00	1,270.00	624.00	1,831.00	664.00	924.00	1,355.00	967.00	420.27	109.13	2,119.38	4,054.28	467.17	924.54	1,211.81	438.79	675.26
	1993	20,539.00	7,163.00	414.00	1,430.00	1,878.00	1,108.00	2,032.00	913.00	1,067.00	3,189.00	1,345.00	510.22	179.92	2,572.68	5,841.82	611.58	1,251.95	1,320.44	674.26	760.30

7. Rural (Sumatra)

Provinces	Year	M	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	P1	P2	P3	P4	P5	P6	P7	P8	P9
	1980	7,120.00	2,595.00	178.00	1,316.00	563.00	260.00	704.00	163.00	318.00	341.00	682.00	241.64	113.62	2,470.04	2,658.88	140.89	795.51	419.86	157.78	297.39
	1981	7,020.00	2,913.00	62.00	1,695.00	190.00	165.00	796.00	67.00	302.00	134.00	696.00	254.53	121.24	2,455.95	2,841.28	163.78	826.50	464.56	176.55	321.76
6. DI Aceh	1984	12,313.00	4,597.00	206.00	2,156.00	505.00	369.00	1,273.00	216.00	559.00	1,177.00	1,255.00	296.58	146.44	2,413.94	3,433.36	244.85	925.49	613.65	241.60	406.48
	1987	13,532.00	4,942.00	178.00	2,769.00	485.00	497.00	1,167.00	196.00	633.00	1,418.00	1,247.00	349.76	179.63	2,372.64	4,172.37	370.18	1,043.83	812.91	337.23	531.53
	1990	15,981.00	6,516.00	296.00	3,450.00	498.00	624.00	1,478.00	272.00	660.00	645.00	1,542.00	417.44	223.94	2,332.05	5,098.58	565.26	1,185.54	1,080.12	478.78	716.20
	1993	22,267.00	7,819.00	284.00	4,408.00	838.00	997.00	1,777.00	433.00	1,019.00	2,262.00	2,430.00	442.35	237.08	3,049.93	6,056.59	645.42	1,333.64	1,189.04	584.94	823.65
	1980	5,979.00	2,649.00	176.00	783.00	347.00	170.00	763.00	123.00	189.00	219.00	560.00	226.33	53.54	1,669.71	2,006.13	144.09	661.90	401.45	234.97	269.71
	1981	6,179.00	2,785.00	100.00	1,030.00	239.00	127.00	835.00	88.00	190.00	184.00	601.00	241.79	61.05	1,778.82	2,226.45	167.03	697.20	447.45	253.75	298.08
7. North Sumatra	1984	8,839.00	3,724.00	180.00	1,299.00	234.00	263.00	1,130.00	142.00	237.00	753.00	877.00	291.34	86.83	2,127.55	2,959.99	247.56	812.83	602.17	318.15	395.39
	1987	12,425.00	5,307.00	315.00	1,846.00	384.00	387.00	1,273.00	223.00	744.00	841.00	1,105.00	351.06	123.74	2,544.64	3,935.23	369.49	960.84	813.42	410.77	534.90
	1990	15,292.00	6,610.00	338.00	2,468.00	600.00	518.00	1,617.00	322.00	511.00	733.00	1,575.00	423.02	176.70	3,043.50	5,231.78	554.95	1,152.42	1,102.97	546.00	736.47
	1993	19,386.00	7,504.00	373.00	2,880.00	813.00	788.00	2,202.00	447.00	722.00	1,547.00	2,110.00	466.24	212.07	3,293.41	6,578.07	659.66	1,394.45	1,250.87	711.21	848.01
	1980	6,613.00	2,692.00	190.00	841.00	415.00	257.00	823.00	108.00	260.00	423.00	604.00	216.56	83.15	1,408.22	2,874.72	145.94	274.06	577.87	206.62	420.46
	1981	7,286.00	2,962.00	122.00	1,077.00	300.00	218.00	1,094.00	85.00	284.00	495.00	649.00	231.57	89.20	1,537.39	3,015.62	167.02	300.65	624.06	222.54	434.74
8. West Sumatra	1984	10,796.00	4,145.00	253.00	1,251.00	410.00	422.00	1,655.00	132.00	454.00	1,202.00	872.00	279.85	108.77	1,960.46	3,463.70	241.63	393.99	773.92	274.54	484.70
	1987	14,522.00	5,502.00	333.00	1,835.00	670.00	719.00	1,695.00	256.00	792.00	1,462.00	1,258.00	338.50	132.86	2,499.95	3,993.27	356.88	560.68	960.37	340.50	558.54
	1990	16,399.00	6,642.00	334.00	1,929.00	694.00	735.00	1,721.00	259.00	641.00	1,772.00	1,672.00	409.82	162.56	3,187.90	4,621.56	536.69	1,174.33	1,192.48	424.55	664.68
	1993	21,362.00	7,330.00	359.00	2,403.00	854.00	952.00	2,736.00	333.00	974.00	2,795.00	2,626.00	480.63	205.56	3,491.95	6,190.19	644.86	1,468.19	1,423.18	704.69	760.85
	1980	6,458.00	2,361.00	163.00	1,308.00	254.00	239.00	739.00	152.00	231.00	317.00	694.00	221.44	68.34	1,538.96	2,440.42	145.01	467.98	489.66	220.80	345.09
	1981	7,271.00	2,739.00	135.00	1,758.00	147.00	243.00	927.00	113.00	267.00	225.00	717.00	236.68	75.13	1,658.11	2,621.03	167.03	498.93	535.76	238.15	366.41
9. Riau	1984	10,870.00	4,074.00	286.00	2,232.00	184.00	379.00	1,306.00	170.00	405.00	592.00	1,242.00	285.59	97.80	2,044.00	3,211.85	244.59	603.41	688.04	296.34	440.04
	1987	12,517.00	4,365.00	190.00	2,597.00	310.00	504.00	1,686.00	149.00	625.00	650.00	1,441.00	344.78	128.30	2,522.30	3,964.25	363.19	760.76	886.89	375.63	546.72
	1990	18,592.00	6,067.00	377.00	3,573.00	798.00	920.00	2,180.00	307.00	817.00	1,115.00	2,438.00	416.42	169.63	3,115.70	4,926.67	545.82	1,163.37	1,147.73	485.27	700.58
	1993	22,820.00	7,208.00	466.00	4,482.00	705.00	1,360.00	2,644.00	498.00	1,114.00	1,898.00	2,445.00	473.43	208.81	3,392.68	6,384.13	652.26	1,431.32	1,337.03	707.95	804.43
	1980	6,675.00	2,412.00	199.00	1,036.00	331.00	218.00	816.00	189.00	297.00	248.00	929.00	202.02	78.48	1,306.57	2,872.06	197.37	581.94	530.43	246.54	387.46
	1981	7,411.00	3,025.00	179.00	1,262.00	343.00	183.00	1,045.00	137.00	391.00	116.00	730.00	216.18	85.04	1,425.25	3,022.12	215.04	610.80	575.92	261.18	405.54
10. Jambi	1984	10,587.00	4,349.00	247.00	1,547.00	361.00	379.00	1,424.00	227.00	407.00	402.00	1,244.00	262.84	106.53	1,814.55	3,502.11	276.06	710.32	724.69	309.14	467.17
	1987	12,275.00	4,739.00	347.00	932.00	716.00	525.00	1,666.00	255.00	1,150.00	595.00	1,350.00	324.27	133.99	2,313.20	4,078.77	365.46	866.81	913.85	370.58	553.87
	1990	18,083.00	6,713.00	376.00	2,869.00	839.00	687.00	2,298.00	443.00	987.00	759.00	2,112.00	409.31	169.24	2,952.68	4,775.82	499.03	1,273.24	1,155.03	450.25	675.17
	1993	20,993.00	6,838.00	471.00	3,090.00	958.00	1,020.00	2,996.00	679.00	808.00	1,363.00	2,770.00	463.36	215.03	3,192.32	6,258.84	635.72	1,684.31	1,383.51	639.12	790.92
	1980	7,244.00	2,789.00	198.00	1,017.00	362.00	314.00	685.00	166.00	429.00	317.00	967.00	168.05	83.94	972.53	3,301.04	301.16	1,003.79	523.76	312.20	396.84
	1981	6,958.00	2,652.00	149.00	1,124.00	203.00	264.00	867.00	136.00	393.00	222.00	948.00	180.28	90.78	1,080.25	3,429.71	311.08	1,032.83	567.95	322.86	415.46
11. South Sumatra	1984	9,464.00	3,666.00	223.00	1,298.00	352.00	355.00	1,069.00	168.00	655.00	560.00	1,118.00	223.07	113.03	1,439.17	3,830.78	341.95	1,133.57	712.10	356.54	476.78
	1987	12,759.00	4,436.00	289.00	1,620.00	430.00	631.00	1,441.00	323.00	1,021.00	887.00	1,681.00	289.55	140.82	1,917.36	4,278.79	376.30	1,279.00	894.28	395.63	556.34
	1990	15,086.00	6,026.00	362.00	2,202.00	567.00	756.00	1,808.00	341.00	800.00	487.00	1,737.00	401.70	175.55	2,554.43	4,779.25	414.58	1,482.01	1,124.87	440.94	660.26
	1993	18,650.00	6,842.00	428.00	2,480.00	557.00	882.00	2,136.00	552.00	857.00	1,587.00	2,329.00	436.02	230.71	2,692.32	6,202.21	610.04	2,153.41	1,390.33	504.71	807.46
	1980	5,916.00	2,925.00	116.00	637.00	240.00	198.00	655.00	123.00	189.00	172.00	661.00	168.54	76.48	1,172.93	2,976.84	225.08	721.55	565.37	271.09	383.37
	1981	6,843.00	3,307.00	80.00	884.00	296.00	160.00	841.00	117.00	281.00	222.00	655.00	182.84	82.21	1,276.67	3,115.40	240.67	741.24	608.96	280.63	400.02
12. Bengkulu	1984	10,975.00	5,087.00	256.00	1,304.00	392.00	332.00	1,405.00	224.00	462.00	326.00	1,187.00	231.61	100.94	1,616.65	3,554.23	293.14	812.47	750.72	312.39	457.10
	1987	12,682.00	5,383.00	202.00	1,417.00	635.00	533.00	1,542.00	255.00	777.00	676.00	1,262.00	301.93	124.68	2,051.26	4,067.06	365.62	933.58	928.40	354.28	538.18
	1990	15,753.00	7,220.00	326.00	1,913.00	611.00	596.00	1,764.00	400.00	921.00	430.00	1,572.00	409.40	154.90	2,607.76	4,668.80	468.51	1,248.98	1,151.74	408.78	652.16
	1993	17,418.00	7,319.00	437.00	1,923.00	378.00	764.00	2,347.00	424.00	542.00	1,034.00	2,250.00	439.01	193.40	2,874.85	6,088.35	597.72	1,690.20	1,379.55	555.69	765.30
	1980	4,464.00	2,087.00	250.00	339.00	158.00	133.00	467.00	221.00	228.00	122.00	459.00	87.54	60.36	1,004.41	2,859.54	255.86	1,026.40	629.41	318.98	328.71
	1981	4,908.00	2,290.00	168.00	481.00	104.00	104.00	707.00	209.00	198.00	97.00	550.00	103.33	63.82	1,063.78	2,994.16	269.54	1,020.70	667.90	315.93	344.35
13. Lampung	1984	6,353.00	3,065.00	264.00	413.00	137.00	171.00	900.00	251.00	340.00	253.00	559.00	160.67	75.42	1,252.43	3,420.32	312.93	1,012.01	792.16	309.35	399.75
	1987	10,211.00	4,041.00	342.00	752.00	476.00	477.00	1,471.00	492.00	645.00	588.00	927.00	255.42	91.05	1,474.53	3,917.43	363.86	1,027.83	945.13	310.42	483.99
	1990	13,145.00	5,908.00	434.00	1,109.00	469.00	495.00	1,676.00	620.00	716.00	443.00	1,275.00	416.77	112.25	1,736.02	4,498.59	423.75	1,066.36	1,134.56	319.38	608.52

	1993	15,488.00	5,908.00	608.00	1,351.00	488.00	729.00	2,312.00	770.00	686.00	1,044.00	1,592.00	376.02	122.32	2,122.80	5,702.17	500.28	1,454.90	1,321.20	374.25	701.96

8. Rural (Kalimantan)

Provinces	Year	M	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	P1	P2	P3	P4	P5	P6	P7	P8	P9
	1980	7,199.00	2,853.00	131.00	1,357.00	601.00	220.00	557.00	108.00	440.00	246.00	686.00	198.62	83.25	1,460.67	2,772.85	213.71	1,264.05	670.58	451.12	342.66
	1981	6,490.00	2,988.00	115.00	1,250.00	388.00	138.00	725.00	35.00	160.00	121.00	570.00	220.74	96.60	1,559.53	3,028.08	245.68	1,321.84	742.58	459.38	381.88
16.West Kalimantan	1984	9,782.00	3,989.00	243.00	1,567.00	900.00	365.00	1,101.00	171.00	335.00	242.00	869.00	296.10	143.58	1,880.91	3,872.42	357.04	1,524.23	986.29	492.03	514.75
	1987	10,436.00	4,571.00	173.00	1,508.00	426.00	360.00	1,139.00	164.00	842.00	292.00	961.00	402.78	215.06	2,283.94	4,979.66	522.59	1,828.18	1,324.55	551.01	699.71
	1990	16,516.00	7,074.00	330.00	2,392.00	1,309.00	580.00	1,616.00	269.00	943.00	609.00	1,394.00	551.91	321.46	2,758.30	6,284.81	788.67	2,160.73	1,772.66	676.67	972.90
	1993	20,179.00	8,382.00	437.00	3,161.00	1,058.00	796.00	1,888.00	328.00	883.00	1,162.00	2,084.00	631.52	425.16	3,681.34	9,155.38	977.09	2,695.22	2,114.26	909.87	1,257.06
	1980	7,695.00	2,827.00	94.00	1,580.00	345.00	280.00	610.00	169.00	666.00	229.00	895.00	141.52	48.40	842.49	1,751.79	145.91	698.47	417.49	245.76	240.25
	1981	7,709.00	2,882.00	88.00	1,789.00	349.00	211.00	770.00	99.00	296.00	270.00	955.00	156.61	54.20	910.68	1,947.00	166.70	745.55	467.25	257.70	262.52
17. Central Kalimantan	1984	10,774.00	4,399.00	184.00	1,792.00	676.00	370.00	996.00	119.00	504.00	590.00	1,144.00	207.37	74.15	1,136.07	2,606.06	238.55	910.38	635.15	297.02	336.43
	1987	12,218.00	4,964.00	120.00	2,161.00	283.00	409.00	1,066.00	71.00	1,445.00	498.00	1,201.00	276.77	102.97	1,431.13	3,515.55	343.43	1,168.73	866.24	348.72	434.14
	1990	19,023.00	6,753.00	317.00	3,635.00	852.00	790.00	1,866.00	234.00	1,993.00	680.00	1,903.00	369.00	139.38	1,751.51	4,467.63	534.25	1,336.46	1,154.66	461.80	594.01
	1993	24,282.00	8,188.00	375.00	5,158.00	1,323.00	1,164.00	2,247.00	283.00	1,381.00	1,323.00	2,840.00	416.98	162.96	2,247.67	6,391.60	652.43	1,719.71	1,373.37	626.92	725.79
	1980	6,655.00	2,603.00	76.00	1,454.00	151.00	230.00	409.00	104.00	447.00	442.00	739.00	160.28	50.99	1,246.13	2,311.51	145.58	1,122.62	458.09	224.23	249.88
	1981	7,244.00	2,651.00	78.00	1,714.00	176.00	290.00	601.00	95.00	289.00	561.00	789.00	174.47	59.86	1,296.17	2,486.76	167.32	1,177.01	513.14	237.35	277.61
18. South Kalimantan	1984	11,017.00	4,136.00	234.00	2,112.00	287.00	359.00	818.00	157.00	628.00	1,340.00	946.00	221.98	91.20	1,452.30	3,055.33	243.43	1,349.79	699.90	282.88	370.88
	1987	13,166.00	4,243.00	167.00	2,308.00	249.00	534.00	1,045.00	229.00	1,459.00	1,677.00	1,255.00	286.50	139.50	1,627.25	3,763.57	358.04	1,553.10	960.78	351.50	498.34
	1990	18,159.00	5,575.00	221.00	3,548.00	454.00	768.00	1,527.00	361.00	1,966.00	2,208.00	1,531.00	371.02	214.13	1,823.27	4,648.10	531.79	1,798.55	1,308.12	469.99	671.85
	1993	23,628.00	6,376.00	232.00	4,414.00	712.00	1,385.00	1,964.00	518.00	1,759.00	4,016.00	2,252.00	429.38	257.76	2,508.63	6,986.75	659.36	2,287.75	1,531.39	596.50	856.62
	1980	7,803.00	2,396.00	161.00	1,377.00	310.00	450.00	733.00	270.00	685.00	519.00	902.00	255.73	118.09	2,078.85	3,793.91	281.52	1,829.63	923.67	656.49	445.08
	1981	7,308.00	2,918.00	113.00	1,434.00	201.00	207.00	830.00	177.00	296.00	223.00	909.00	284.87	138.99	2,208.38	4,109.15	324.67	1,898.12	1,017.90	661.05	501.25
19. East Kalimantan	1984	9,967.00	3,580.00	191.00	1,726.00	349.00	421.00	1,021.00	275.00	423.00	758.00	1,223.00	384.83	213.01	2,625.76	5,138.79	475.52	2,138.07	1,337.43	687.05	693.08
	1987	13,535.00	4,004.00	253.00	2,380.00	598.00	788.00	1,588.00	286.00	1,274.00	747.00	1,617.00	528.79	327.16	3,136.76	6,443.77	701.75	2,487.64	1,782.86	753.30	965.28
	1990	17,604.00	6,277.00	386.00	2,940.00	695.00	803.00	2,065.00	481.00	1,077.00	1,022.00	1,858.00	734.81	503.55	3,765.08	8,102.00	1,043.09	2,984.99	2,390.67	891.55	1,351.78
	1993	25,156.00	6,798.00	501.00	4,343.00	1,102.00	1,737.00	2,779.00	985.00	1,431.00	2,649.00	2,831.00	846.06	687.37	5,115.02	11,919.16	1,301.74	3,670.73	2,855.15	1,192.82	1,788.33

9. Rural (Sulawesi)

Provinces	Year	M	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	P1	P2	P3	P4	P5	P6	P7	P8	P9
	1980	5,464.00	2,115.00	234.00	894.00	391.00	180.00	497.00	99.00	353.00	177.00	524.00	187.51	157.28	1,072.98	1,796.13	162.84	878.07	472.97	296.37	257.15
	1981	7,541.00	3,089.00	233.00	1,355.00	444.00	158.00	925.00	78.00	314.00	262.00	683.00	200.59	155.84	1,152.50	1,905.43	184.58	883.35	512.49	306.43	279.60
20. North Sulawesi	1984	7,530.00	2,933.00	402.00	1,348.00	455.00	277.00	78.00	171.00	464.00	616.00	786.00	242.61	154.05	1,408.73	2,253.30	260.14	921.44	641.45	338.72	354.26
	1987	11,431.00	4,754.00	341.00	2,314.00	524.00	411.00	150.00	248.00	639.00	900.00	1,150.00	293.55	160.20	1,721.93	2,664.76	371.93	1,031.45	804.57	377.65	453.32
	1990	15,618.00	5,788.00	592.00	2,553.00	882.00	627.00	1,696.00	384.00	750.00	832.00	1,514.00	355.34	175.56	2,104.76	3,151.45	538.14	1,241.05	1,011.38	432.44	584.58
	1993	18,743.00	7,182.00	534.00	3,387.00	948.00	677.00	1,612.00	295.00	736.00	1,189.00	2,183.00	447.01	205.30	2,719.41	4,161.11	689.16	1,609.56	1,096.24	599.02	729.10
	1980	4,989.00	2,104.00	392.00	638.00	230.00	161.00	435.00	135.00	353.00	89.00	452.00	141.48	112.18	952.85	1,639.26	149.39	792.54	469.27	364.32	226.17
	1981	5,761.00	2,679.00	165.00	926.00	220.00	88.00	667.00	38.00	248.00	60.00	670.00	155.50	117.49	1,032.36	1,763.91	170.97	802.23	508.63	365.07	251.62
21. Central Sulawesi	1984	6,451.00	2,798.00	507.00	700.00	219.00	151.00	520.00	109.00	346.00	468.00	633.00	202.73	137.93	1,291.09	2,168.38	246.12	854.86	639.49	371.45	338.23
	1987	10,295.00	3,899.00	550.00	1,306.00	445.00	449.00	989.00	170.00	797.00	495.00	1,195.00	267.92	173.93	1,615.72	2,672.48	357.82	982.99	813.32	389.72	460.13
	1990	12,609.00	5,041.00	661.00	1,958.00	526.00	428.00	1,261.00	345.00	736.00	378.00	1,275.00	359.57	232.49	2,023.29	3,302.67	524.72	1,213.75	1,046.96	427.00	632.25
	1993	17,020.00	5,695.00	827.00	2,600.00	587.00	734.00	1,734.00	506.00	1,044.00	1,254.00	2,039.00	431.84	317.45	2,662.90	4,546.76	665.77	1,496.27	1,210.00	597.67	830.40
	1980	4,626.00	2,355.00	121.00	714.00	212.00	120.00	280.00	107.00	295.00	144.00	278.00	95.45	67.09	832.72	1,482.39	135.94	707.01	465.58	432.26	195.20
	1981	4,883.00	2,205.00	98.00	1,205.00	105.00	111.00	374.00	72.00	218.00	107.00	388.00	110.40	79.14	912.21	1,622.39	157.35	721.11	504.77	423.71	223.64
22. South Sulawesi	1984	7,666.00	3,195.00	160.00	1,513.00	339.00	319.00	558.00	208.00	457.00	318.00	599.00	162.85	121.81	1,173.45	2,083.46	232.09	788.28	637.52	404.17	322.20
	1987	8,864.00	3,858.00	183.00	1,720.00	179.00	326.00	666.00	190.00	523.00	409.00	810.00	242.29	187.67	1,509.51	2,680.21	343.71	934.53	822.08	401.80	466.94
	1990	13,090.00	5,234.00	366.00	2,637.00	546.00	589.00	994.00	329.00	797.00	492.00	1,106.00	363.79	289.42	1,941.81	3,453.90	511.30	1,186.44	1,082.55	421.56	679.93
	1993	17,179.00	5,929.00	310.00	3,754.00	934.00	720.00	1,186.00	394.00	925.00	1,123.00	1,904.00	416.68	429.61	2,606.39	4,932.41	642.38	1,382.99	1,323.76	596.31	931.71
	1980	4,377.00	1,858.00	392.00	763.00	147.00	124.00	312.00	34.00	313.00	91.00	343.00	148.14	90.56	962.83	1,605.53	138.70	702.10	526.20	364.31	259.96
	1981	5,109.00	2,024.00	436.00	1,110.00	180.00	67.00	438.00	22.00	246.00	79.00	507.00	161.07	96.88	1,037.64	1,742.92	160.66	710.65	562.37	364.44	282.46
23. South-East Sulawesi	1984	7,760.00	2,675.00	757.00	1,256.00	460.00	248.00	707.00	92.00	536.00	342.00	687.00	204.83	119.93	1,280.30	2,192.42	237.79	758.69	682.76	368.88	360.46
	1987	7,869.00	3,047.00	525.00	1,412.00	336.00	226.00	755.00	86.00	518.00	304.00	660.00	265.96	157.21	1,582.20	2,764.65	354.73	878.06	843.12	385.05	474.49
	1990	11,231.00	4,304.00	697.00	1,967.00	254.00	397.00	1,013.00	176.00	852.00	488.00	1,083.00	352.88	215.79	1,958.37	3,494.93	533.04	1,094.18	1,059.43	419.93	640.20
	1993	15,071.00	5,431.00	815.00	2,878.00	441.00	518.00	1,034.00	213.00	901.00	867.00	1,973.00	422.66	303.90	2,724.95	4,778.52	670.93	1,373.72	1,243.87	585.77	838.50

10. Rural (Rest of Indonesia)

Provinces	Year	M	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	P1	P2	P3	P4	P5	P6	P7	P8	P9
	1980	5,660.00	1,338.00	583.00	1,139.00	219.00	286.00	680.00	148.00	323.00	308.00	636.00	156.02	103.91	984.86	1,643.65	143.53	737.30	515.55	350.73	259.39
	1981	5,623.00	1,680.00	795.00	1,149.00	117.00	95.00	636.00	28.00	480.00	76.00	567.00	168.97	108.67	1,060.61	1,775.42	165.44	745.19	552.39	352.84	281.89
24. Maluku	1984	9,203.00	2,376.00	1,726.00	1,331.00	672.00	400.00	680.00	227.00	804.00	213.00	774.00	212.39	126.75	1,305.99	2,204.59	242.26	791.24	674.50	362.85	359.22
	1987	9,148.00	2,206.00	1,553.00	1,663.00	77.00	351.00	1,058.00	109.00	588.00	511.00	1,032.00	271.48	157.81	1,610.15	2,744.67	358.17	908.74	835.41	383.57	470.26
	1990	13,971.00	3,709.00	1,281.00	2,458.00	351.00	482.00	1,746.00	523.00	1,122.00	1,025.00	1,274.00	353.37	207.74	1,987.65	3,426.23	534.06	1,123.55	1,049.82	422.43	629.08
	1993	17,129.00	3,842.00	2,024.00	3,121.00	311.00	605.00	2,164.00	388.00	1,114.00	1,420.00	2,140.00	427.53	284.18	2,723.84	4,655.04	674.58	1,420.88	1,214.34	588.42	816.62
	1980	6,130.00	1,154.00	430.00	980.00	311.00	512.00	802.00	241.00	465.00	557.00	678.00	149.72	93.23	967.23	1,613.15	139.67	709.14	524.07	361.60	259.84
	1981	9,473.00	1,804.00	1,059.00	2,026.00	362.00	281.00	1,561.00	170.00	980.00	281.00	949.00	162.65	99.24	1,042.24	1,749.42	161.62	717.56	560.37	362.12	282.35
25. Irian Jaya	1984	11,497.00	2,152.00	1,839.00	1,916.00	517.00	616.00	1,393.00	244.00	783.00	839.00	1,198.00	206.34	121.29	1,285.44	2,194.85	238.68	765.20	681.11	367.67	360.21
	1987	9,611.00	1,621.00	2,155.00	1,283.00	858.00	286.00	1,267.00	378.00	616.00	248.00	899.00	267.06	157.33	1,587.79	2,760.65	355.42	884.20	841.58	384.75	473.65
	1990	13,914.00	3,845.00	2,215.00	1,747.00	1,351.00	406.00	1,493.00	423.00	822.00	356.00	1,256.00	352.97	214.18	1,964.23	3,481.19	533.24	1,100.05	1,057.50	420.43	637.98
	1993	18,477.00	4,310.00	2,508.00	1,552.00	2,285.00	1,254.00	2,208.00	695.00	1,022.00	510.00	2,133.00	423.63	299.96	2,724.73	4,753.82	671.66	1,383.15	1,237.96	586.30	834.13
	1980	4,186.00	1,860.00	184.00	314.00	564.00	95.00	348.00	155.00	252.00	90.00	324.00	207.49	92.41	1,102.92	1,694.93	130.77	606.76	643.74	296.36	358.50
	1981	5,166.00	2,748.00	281.00	296.00	548.00	36.00	541.00	101.00	193.00	38.00	384.00	217.30	94.02	1,168.37	1,842.45	153.66	608.62	673.71	304.53	372.13
14. NTT	1984	6,440.00	2,989.00	310.00	408.00	780.00	94.00	791.00	140.00	375.00	88.00	465.00	248.93	100.04	1,376.36	2,325.42	235.16	632.93	771.28	331.01	420.95
	1987	9,121.00	4,098.00	607.00	605.00	1,011.00	188.00	1,015.00	242.00	547.00	150.00	658.00	287.67	110.05	1,621.38	2,941.25	362.65	716.66	893.96	363.62	496.41
	1990	11,390.00	5,373.00	546.00	789.00	1,295.00	174.00	1,318.00	297.00	606.00	214.00	778.00	335.27	125.48	1,910.02	3,728.22	563.09	882.34	1,048.77	411.23	608.42
	1993	15,582.00	7,114.00	769.00	1,076.00	1,616.00	343.00	1,931.00	416.00	826.00	399.00	1,092.00	419.46	164.65	2,905.57	4,856.39	704.64	1,241.89	1,197.85	563.33	753.40
	1980	3,864.00	2,179.00	51.00	360.00	228.00	79.00	300.00	91.00	167.00	142.00	267.00	207.49	92.41	1,102.92	1,694.93	130.77	606.76	643.74	296.36	358.50
	1981	4,474.00	2,333.00	58.00	492.00	222.00	92.00	497.00	114.00	155.00	157.00	354.00	217.30	94.02	1,168.37	1,842.45	153.66	608.62	673.71	304.53	372.13
15. NTB	1984	6,343.00	3,606.00	79.00	625.00	248.00	114.00	572.00	107.00	235.00	352.00	405.00	248.93	100.04	1,376.36	2,325.42	235.16	632.93	771.28	331.01	420.95
	1987	8,997.00	4,274.00	136.00	956.00	419.00	243.00	947.00	266.00	417.00	716.00	623.00	287.67	110.05	1,621.38	2,941.25	362.65	716.66	893.96	363.62	496.41
	1990	12,143.00	5,978.00	157.00	1,225.00	514.00	353.00	1,416.00	375.00	580.00	669.00	876.00	335.27	125.48	1,910.02	3,728.22	563.09	882.34	1,048.77	411.23	608.42
	1993	16,815.00	7,309.00	239.00	1,669.00	919.00	524.00	1,968.00	575.00	847.00	1,570.00	1,195.00	419.46	164.65	2,905.57	4,856.39	704.64	1,241.89	1,197.85	563.33	753.40

Poorest Household:

1. Urban (Java+Bali)

Provinces	Obs.	M	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	P1	P2	P3	P4	P5	P6	P7	P8	P9
	1	8,840	4,517	63	1,172	0	195	740	312	328	1,097	416	570.02	233.86	3,099.74	7,593.51	785.83	2,016.95	1,688.13	925.22	947.60
	2	11,476	5,525	173	1,041	141	286	953	604	384	1,290	1,079	570.02	233.86	3,099.74	7,593.51	785.83	2,016.95	1,688.13	925.22	947.60
1.West Jawa	3	14,767	5,792	203	1,099	430	671	1,227	745	564	2,644	1,392	570.02	233.86	3,099.74	7,593.51	785.83	2,016.95	1,688.13	925.22	947.60
	4	17,343	5,738	222	1,518	788	1,032	998	921	769	3,330	2,027	570.02	233.86	3,099.74	7,593.51	785.83	2,016.95	1,688.13	925.22	947.60
	5	8,466	4,566	103	342	0	87	856	677	443	825	567	470.54	133.89	2,517.36	7,183.67	757.26	1,646.65	1,531.74	858.88	803.36
	6	9,281	4,667	139	405	147	311	170	909	282	1,417	834	470.54	133.89	2,517.36	7,183.67	757.26	1,646.65	1,531.74	858.88	803.36
2.Central Jawa	7	13,510	4,876	170	657	444	537	1,645	1,141	523	2,257	1,260	470.54	133.89	2,517.36	7,183.67	757.26	1,646.65	1,531.74	858.88	803.36
	8	18,107	5,172	190	889	883	949	2,141	1,429	869	3,640	1,945	470.54	133.89	2,517.36	7,183.67	757.26	1,646.65	1,531.74	858.88	803.36
	9	7,651	4,142	137	86	0	193	1,122	450	161	953	407	497.24	148.68	2,463.20	6,904.59	726.95	1,539.45	1,299.50	722.53	753.70
	10	9,846	4,018	156	97	28	451	1,220	909	327	2,051	589	497.24	148.68	2,463.20	6,904.59	726.95	1,539.45	1,299.50	722.53	753.70
3.DIY	11	13,287	4,450	186	222	343	621	1,604	1,026	612	3,005	1,218	497.24	148.68	2,463.20	6,904.59	726.95	1,539.45	1,299.50	722.53	753.70
	12	16,445	4,727	157	232	761	1,137	1,839	1,294	868	3,954	1,476	497.24	148.68	2,463.20	6,904.59	726.95	1,539.45	1,299.50	722.53	753.70
	13	7,851	4,786	117	273	0	161	1,200	534	140	222	418	457.51	127.25	2,270.65	6,594.76	709.62	1,597.05	1,395.07	598.22	691.01
	14	9,813	4,643	107	452	64	323	1,139	786	212	1,286	801	457.51	127.25	2,270.65	6,594.76	709.62	1,597.05	1,395.07	598.22	691.01
4.East Jawa	15	13,327	5,103	138	686	324	466	1,565	1,191	442	2,149	1,263	457.51	127.25	2,270.65	6,594.76	709.62	1,597.05	1,395.07	598.22	691.01
	16	18,129	5,322	185	1,147	880	954	1,888	1,498	831	3,370	2,054	457.51	127.25	2,270.65	6,594.76	709.62	1,597.05	1,395.07	598.22	691.01
	17	9,558	3,498	143	714	143	0	738	524	48	3,333	417	571.44	201.51	2,881.40	6,542.83	684.97	1,402.19	1,478.89	755.17	851.54
	18	10,368	5,073	13	422	937	254	1,259	495	27	1,734	154	571.44	201.51	2,881.40	6,542.83	684.97	1,402.19	1,478.89	755.17	851.54
5.Bali	19	14,728	6,954	305	1,375	436	526	1,486	720	435	1,840	651	571.44	201.51	2,881.40	6,542.83	684.97	1,402.19	1,478.89	755.17	851.54
	20	18,892	7,393	180	1,401	978	883	1,908	1,117	767	3,069	1,196	571.44	201.51	2,881.40	6,542.83	684.97	1,402.19	1,478.89	755.17	851.54

2. Urban (Sumatra)

Provinces	Obs.	M	X1	*X2*	X3	X4	X5	X6	X7	X8	X9	X10	P1	P2	P3	P4	P5	P6	P7	P8	P9
	1	11,574	7,077	234	2,232	0	212	740	31	0	491	557	508.70	272.64	3,507.42	6,965.07	742.23	1,533.69	1,367.40	672.68	947.19
	2	15,395	6,782	160	2,995	0	390	1,412	291	189	1,357	1,819	508.70	272.64	3,507.42	6,965.07	742.23	1,533.69	1,367.40	672.68	947.19
6. DI Aceh	3	18,947	6,125	229	3,943	296	775	2,331	511	564	1,877	2,296	508.70	272.64	3,507.42	6,965.07	742.23	1,533.69	1,367.40	672.68	947.19
	4	25,083	6,569	286	4,904	808	1,427	2,509	821	1,250	3,341	3,168	508.70	272.64	3,507.42	6,965.07	742.23	1,533.69	1,367.40	672.68	947.19
	5	11,103	5,719	116	1,503	338	261	969	166	332	692	1,007	248.96	58.90	1,836.68	2,206.74	158.50	728.08	441.59	258.47	296.68
	6	13,839	5,762	204	2,059	319	523	1,771	296	414	1,026	1,465	540.84	246.00	3,820.36	7,630.56	765.21	1,617.57	1,451.01	825.00	983.69
7. North Sumatra	7	18,989	6,437	207	3,010	379	1,018	2,392	475	597	2,031	2,443	540.84	246.00	3,820.36	7,630.56	765.21	1,617.57	1,451.01	825.00	983.69
	8	25,020	6,618	286	4,128	969	1,462	3,094	677	1,122	3,326	3,338	540.84	246.00	3,820.36	7,630.56	765.21	1,617.57	1,451.01	825.00	983.69
	9	11,186	6,239	234	935	779	0	1,324	0	312	1,363	0	557.53	238.44	4,050.66	7,180.62	748.03	1,703.10	1,650.89	817.44	882.59
	10	15,763	5,804	227	1,959	337	646	2,032	300	415	2,546	1,497	557.53	238.44	4,050.66	7,180.62	748.03	1,703.10	1,650.89	817.44	882.59
8. West Sumatra	11	19,251	6,310	414	2,226	1,177	1,043	2,467	455	650	3,184	1,325	557.53	238.44	4,050.66	7,180.62	748.03	1,703.10	1,650.89	817.44	882.59
	12	27,273	6,701	442	3,351	1,748	1,686	3,118	509	1,185	5,307	3,226	557.53	238.44	4,050.66	7,180.62	748.03	1,703.10	1,650.89	817.44	882.59
	13	10,058	5,050	0	1,553	0	1,781	924	750	0	0	0	520.78	229.69	3,731.95	7,022.54	717.49	1,574.46	1,470.73	778.74	884.88
	14	15,257	5,155	157	2,939	430	924	2,017	234	219	1,152	2,030	520.78	229.69	3,731.95	7,022.54	717.49	1,574.46	1,470.73	778.74	884.88
9. Riau	15	18,939	5,505	346	3,541	632	1,477	2,010	496	646	1,903	2,383	520.78	229.69	3,731.95	7,022.54	717.49	1,574.46	1,470.73	778.74	884.88
	16	11,747	4,944	396	2,100	0	321	3,000	675	0	311	0	509.70	236.53	3,511.55	6,884.73	699.29	1,852.74	1,521.86	703.03	870.01
	17	14,034	5,577	225	1,869	312	704	2,539	576	341	975	916	509.70	236.53	3,511.55	6,884.73	699.29	1,852.74	1,521.86	703.03	870.01
10. Jambi	18	18,310	5,810	283	2,746	1,038	1,161	2,879	768	550	1,429	1,646	509.70	236.53	3,511.55	6,884.73	699.29	1,852.74	1,521.86	703.03	870.01
	19	24,835	6,068	422	3,845	1,933	1,741	3,658	905	1,135	2,322	2,806	509.70	236.53	3,511.55	6,884.73	699.29	1,852.74	1,521.86	703.03	870.01
	20	10,168	4,725	191	1,198	0	392	1,459	399	150	543	1,111	488.34	258.40	3,015.40	6,946.47	683.24	2,411.82	1,557.17	565.27	904.36
	21	14,272	5,123	272	2,111	199	1,027	1,913	596	474	1,258	1,299	488.34	258.40	3,015.40	6,946.47	683.24	2,411.82	1,557.17	565.27	904.36
11. South Sumatra	22	18,615	5,762	367	2,417	507	1,182	2,312	860	740	2,541	1,927	488.34	258.40	3,015.40	6,946.47	683.24	2,411.82	1,557.17	565.27	904.36
	23	24,236	5,783	432	2,918	1,357	2,120	2,708	1,189	1,134	3,920	2,675	488.34	258.40	3,015.40	6,946.47	683.24	2,411.82	1,557.17	565.27	904.36
	24	11,330	4,821	134	268	0	428	1,125	268	0	536	3,750	496.08	218.54	3,248.58	6,879.84	675.43	1,909.93	1,558.90	627.93	864.78
	25	13,911	6,197	184	1,793	418	426	1,946	293	364	1,109	1,181	496.08	218.54	3,248.58	6,879.84	675.43	1,909.93	1,558.90	627.93	864.78
12. Bengkulu	26	18,323	6,282	349	2,022	797	1,046	2,385	510	744	1,907	2,281	496.08	218.54	3,248.58	6,879.84	675.43	1,909.93	1,558.90	627.93	864.78
	27	23,801	6,414	377	2,992	1,569	2,319	2,765	686	1,105	2,881	2,693	496.08	218.54	3,248.58	6,879.84	675.43	1,909.93	1,558.90	627.93	864.78
	28	7,571	3,985	275	490	122	128	1,102	571	163	255	480	432.42	140.67	2,441.22	6,557.49	575.32	1,673.13	1,519.37	430.38	807.25
	29	9,845	5,041	71	720	294	265	1,170	481	258	633	912	432.42	140.67	2,441.22	6,557.49	575.32	1,673.13	1,519.37	430.38	807.25
13. Lampung	30	14,103	5,081	157	1,138	296	670	1,736	805	465	1,763	1,992	432.42	140.67	2,441.22	6,557.49	575.32	1,673.13	1,519.37	430.38	807.25
	31	18,895	5,440	195	1,538	720	1,023	2,362	854	640	3,107	3,016	432.42	140.67	2,441.22	6,557.49	575.32	1,673.13	1,519.37	430.38	807.25
	32	23,859	5,645	185	2,230	1,353	1,674	2,769	1,171	988	4,042	3,802	432.42	140.67	2,441.22	6,557.49	575.32	1,673.13	1,519.37	430.38	807.25

3. Urban (Kalimantan)

Provinces	Obs.	M	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	P1	P2	P3	P4	P5	P6	P7	P8	P9
	1	16,362	6,383	164	3,752	415	647	1,380	340	452	1,246	1,583	694.67	467.68	4,049.48	10,070.92	1,074.79	2,964.74	2,325.69	1,000.86	1,382.77
	2	18,396	6,003	198	3,325	647	892	1,921	483	795	2,338	1,794	694.67	467.68	4,049.48	10,070.92	1,074.79	2,964.74	2,325.69	1,000.86	1,382.77
16.West Kalimantan	3	24,394	6,465	359	4,332	2,008	1,867	2,181	824	1,223	2,746	2,389	694.67	467.68	4,049.48	10,070.92	1,074.79	2,964.74	2,325.69	1,000.86	1,382.77
	4	32,829	5,952	418	5,287	3,305	3,027	2,871	1,057	2,086	5,148	3,678	694.67	467.68	4,049.48	10,070.92	1,074.79	2,964.74	2,325.69	1,000.86	1,382.77
	5	38,015	5,865	652	5,804	4,650	3,043	3,096	1,477	2,745	6,693	3,990	694.67	467.68	4,049.48	10,070.92	1,074.79	2,964.74	2,325.69	1,000.86	1,382.77
	6	45,860	6,057	538	6,867	6,828	4,738	3,408	1,278	3,948	7,742	4,456	694.67	467.68	4,049.48	10,070.92	1,074.79	2,964.74	2,325.69	1,000.86	1,382.77
	7	12,063	4,698	107	2,785	0	429	937	268	1,875	964	0	458.68	179.25	2,472.43	7,030.76	717.67	1,891.68	1,510.71	689.61	798.37
	8	15,626	5,031	176	3,856	313	672	1,931	363	860	929	1,495	458.68	179.25	2,472.43	7,030.76	717.67	1,891.68	1,510.71	689.61	798.37
17. Central Kalimantan	9	21,063	6,083	210	4,014	1,092	1,046	2,669	609	1,254	1,789	2,297	458.68	179.25	2,472.43	7,030.76	717.67	1,891.68	1,510.71	689.61	798.37
	10	26,726	6,321	278	5,336	1,816	1,646	3,182	952	1,629	2,830	2,736	458.68	179.25	2,472.43	7,030.76	717.67	1,891.68	1,510.71	689.61	798.37
	11	36,153	6,822	344	7,108	3,350	3,081	3,837	1,321	2,817	4,763	2,710	458.68	179.25	2,472.43	7,030.76	717.67	1,891.68	1,510.71	689.61	798.37

	12	43,310	6,899	584	8,627	4,732	4,110	4,524	1,903	3,886	5,611	2,434	458.68	179.25	2,472.43	7,030.76	717.67	1,891.68	1,510.71	689.61	798.37
	13	11,592	5,786	600	2,464	0	0	814	0	128	1,350	450	480.91	288.69	2,809.67	7,825.16	738.49	2,562.28	1,715.16	668.08	959.42
	14	14,662	4,756	95	3,313	141	378	1,326	248	632	2,789	984	480.91	288.69	2,809.67	7,825.16	738.49	2,562.28	1,715.16	668.08	959.42
18. South Kalimantan	15	18,871	5,376	124	4,248	285	852	1,844	384	100	4,067	1,591	480.91	288.69	2,809.67	7,825.16	738.49	2,562.28	1,715.16	668.08	959.42
	16	26,542	5,911	224	5,261	818	1,410	2,167	742	2,017	5,583	2,409	480.91	288.69	2,809.67	7,825.16	738.49	2,562.28	1,715.16	668.08	959.42
	17	35,206	6,074	233	6,947	1,386	2,271	2,784	711	2,784	8,267	3,749	480.91	288.69	2,809.67	7,825.16	738.49	2,562.28	1,715.16	668.08	959.42
	18	43,832	6,180	255	6,831	2,336	4,585	3,121	1,037	4,319	10,402	4,766	480.91	288.69	2,809.67	7,825.16	738.49	2,562.28	1,715.16	668.08	959.42
	19	10,931	4,469	292	1,554	0	565	1,108	609	312	647	1,375	956.04	776.73	5,779.97	13,468.65	1,470.97	4,147.93	3,226.32	1,347.88	2,020.81
	20	16,481	5,227	356	3,377	408	893	2,142	391	973	1,400	1,314	956.04	776.73	5,779.97	13,468.65	1,470.97	4,147.93	3,226.32	1,347.88	2,020.81
19. East Kalimantan	21	22,955	5,759	335	4,175	932	1,915	2,597	807	1,167	2,716	2,552	956.04	776.73	5,779.97	13,468.65	1,470.97	4,147.93	3,226.32	1,347.88	2,020.81
	22	29,068	5,898	459	4,796	2,167	2,939	3,472	1,136	1,763	3,269	3,169	956.04	776.73	5,779.97	13,468.65	1,470.97	4,147.93	3,226.32	1,347.88	2,020.81
	23	35,142	6,235	534	5,405	3,585	3,731	4,121	1,455	2,884	5,078	2,114	956.04	776.73	5,779.97	13,468.65	1,470.97	4,147.93	3,226.32	1,347.88	2,020.81
	24	45,672	6,381	635	6,488	4,582	5,255	4,508	1,736	4,364	7,462	4,261	956.04	776.73	5,779.97	13,468.65	1,470.97	4,147.93	3,226.32	1,347.88	2,020.81

4. Urban (Sulawesi)

Provinces	Obs.	M	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	P1	P2	P3	P4	P5	P6	P7	P8	P9
	1	8,428	4,964	0	1,607	0	0	1,321	0	536	0	0	514.06	236.09	3,127.32	4,785.28	792.54	1,850.99	1,260.67	688.87	83
	2	10,913	5,180	252	1,770	186	98	1,378	84	554	433	978	514.06	236.09	3,127.32	4,785.28	792.54	1,850.99	1,260.67	688.87	83
20. North Sulawesi	3	15,153	6,133	255	3,148	317	355	1,386	247	547	1,096	1,669	514.06	236.09	3,127.32	4,785.28	792.54	1,850.99	1,260.67	688.87	83
	4	19,340	7,322	338	3,710	629	579	1,754	408	837	1,745	2,018	514.06	236.09	3,127.32	4,785.28	792.54	1,850.99	1,260.67	688.87	83
	5	24,600	7,776	404	4,750	1,145	1,252	2,368	437	1,055	2,472	2,941	514.06	236.09	3,127.32	4,785.28	792.54	1,850.99	1,260.67	688.87	83
	6	8,474	2,813	1,128	2,707	0	0	676	0	135	902	113	500.94	368.24	3,088.96	5,274.24	772.30	1,735.67	1,403.60	693.29	96
	7	10,856	3,959	1,195	3,228	0	56	1,316	17	166	468	451	500.94	368.24	3,088.96	5,274.24	772.30	1,735.67	1,403.60	693.29	96
21. Central Sulawesi	8	13,497	4,577	455	2,989	292	638	1,440	275	530	624	1,677	500.94	368.24	3,088.96	5,274.24	772.30	1,735.67	1,403.60	693.29	96
	9	19,019	4,853	1,084	3,818	376	934	1,813	401	785	2,163	2,792	500.94	368.24	3,088.96	5,274.24	772.30	1,735.67	1,403.60	693.29	96
	10	23,662	5,898	310	4,420	1,552	1,688	2,472	669	1,239	2,679	2,735	500.94	368.24	3,088.96	5,274.24	772.30	1,735.67	1,403.60	693.29	96
	11	9,097	5,059	571	1,861	0	197	467	177	109	227	429	483.34	498.35	3,023.41	5,721.59	745.16	1,604.26	1,535.56	691.72	1,08
	12	11,029	4,917	266	2,510	0	302	788	180	346	625	1,095	483.34	498.35	3,023.41	5,721.59	745.16	1,604.26	1,535.56	691.72	1,08
22. South Sulawesi	13	14,492	5,275	146	3,889	64	544	1,281	265	528	1,025	1,475	483.34	498.35	3,023.41	5,721.59	745.16	1,604.26	1,535.56	691.72	1,08
	14	17,867	5,536	185	4,587	180	909	1,549	304	780	1,543	2,294	483.34	498.35	3,023.41	5,721.59	745.16	1,604.26	1,535.56	691.72	1,08
	15	22,966	5,780	201	5,560	533	1,728	2,008	595	1,189	2,728	2,644	483.34	498.35	3,023.41	5,721.59	745.16	1,604.26	1,535.56	691.72	1,08
	16	9,831	5,092	78	2,247	0	157	873	120	465	679	120	464.93	334.29	2,997.45	5,256.37	738.02	1,511.09	1,368.26	644.35	92
	17	14,353	5,683	988	3,205	41	451	1,365	113	604	738	1,165	464.93	334.29	2,997.45	5,256.37	738.02	1,511.09	1,368.26	644.35	92
23. South-East Sulawesi	18	17,688	6,349	306	4,066	142	1,062	1,650	320	697	1,814	1,282	464.93	334.29	2,997.45	5,256.37	738.02	1,511.09	1,368.26	644.35	92
	19	23,484	6,553	300	5,181	643	2,208	2,277	626	1,304	2,225	2,167	464.93	334.29	2,997.45	5,256.37	738.02	1,511.09	1,368.26	644.35	92
	20	30,195	6,985	227	6,294	1,456	3,858	3,007	1,055	1,631	3,038	2,644	464.93	334.29	2,997.45	5,256.37	738.02	1,511.09	1,368.26	644.35	92

5. Urban (Rest of Indonesia)

Provinces	*Obs.*	M	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	P1	P2	P3	P4	P5	P6	P7	P8	P9
	1	9,344	0	5,000	3,333	0	0	428	0	0	0	583	470.28	312.60	2,996.23	5,120.54	742.03	1,562.97	1,335.78	647.26	898
	2	10,937	2,532	2,999	1,810	0	0	1,369	179	1,143	298	607	470.28	312.60	2,996.23	5,120.54	742.03	1,562.97	1,335.78	647.26	898
24. Maluku	3	13,924	4,932	1,067	2,439	62	365	1,554	335	594	1,727	849	470.28	312.60	2,996.23	5,120.54	742.03	1,562.97	1,335.78	647.26	898
	4	17,216	5,494	945	3,151	53	560	1,812	320	952	2,513	1,416	470.28	312.60	2,996.23	5,120.54	742.03	1,562.97	1,335.78	647.26	898
	5	23,194	6,137	710	4,015	756	1,353	2,433	669	965	3,879	2,277	470.28	312.60	2,996.23	5,120.54	742.03	1,562.97	1,335.78	647.26	898
	6	29,402	6,811	742	4,690	1,001	2,032	3,031	847	1,363	5,205	3,680	470.28	312.60	2,996.23	5,120.54	742.03	1,562.97	1,335.78	647.26	898
	7	9,770	4,937	774	1,309	298	0	1,274	0	238	0	940	474.47	335.95	3,051.70	5,324.28	752.26	1,549.13	1,386.52	656.66	934
	8	14,106	4,551	1,826	1,541	1,034	313	1,492	308	754	337	1,950	474.47	335.95	3,051.70	5,324.28	752.26	1,549.13	1,386.52	656.66	934
25. Irian Jaya	9	17,746	5,718	1,404	2,951	429	865	2,561	418	776	849	1,775	474.47	335.95	3,051.70	5,324.28	752.26	1,549.13	1,386.52	656.66	934
	10	22,445	6,383	929	3,459	859	1,687	3,259	793	1,135	1,862	2,079	474.47	335.95	3,051.70	5,324.28	752.26	1,549.13	1,386.52	656.66	934
	11	31,914	7,218	803	4,576	2,049	3,654	4,059	1,261	2,125	3,300	2,869	474.47	335.95	3,051.70	5,324.28	752.26	1,549.13	1,386.52	656.66	934
	12	9,625	6,887	451	632	0	0	598	226	335	192	304	486.57	486.57	486.57	486.57	486.57	486.57	486.57	486.57	486
	13	10,153	5,161	741	1,285	265	203	1,113	136	332	322	595	486.57	486.57	486.57	486.57	486.57	486.57	486.57	486.57	486
14. NTT	14	13,440	6,583	336	1,862	592	477	1,496	241	489	553	811	486.57	486.57	486.57	486.57	486.57	486.57	486.57	486.57	486
	15	17,342	7,166	299	2,073	1,217	925	2,002	430	640	1,260	1,330	486.57	486.57	486.57	486.57	486.57	486.57	486.57	486.57	486
	16	22,977	7,331	233	2,582	1,499	1,961	2,923	870	1,058	2,372	2,148	486.57	486.57	486.57	486.57	486.57	486.57	486.57	486.57	486
	17	28,390	7,445	365	3,156	2,915	2,423	3,422	1,621	1,530	3,578	1,935	486.57	486.57	486.57	486.57	486.57	486.57	486.57	486.57	486
	18	9,226	5,425	165	449	49	37	860	860	330	919	132	486.57	190.99	3,370.46	5,633.41	817.38	1,440.59	1,389.50	653.46	873
	19	11,155	5,773	134	1,098	222	155	1,086	477	239	1,185	786	486.57	190.99	3,370.46	5,633.41	817.38	1,440.59	1,389.50	653.46	873
15. NTB	20	15,016	6,076	159	1,409	641	499	1,532	748	441	2,418	1,093	486.57	190.99	3,370.46	5,633.41	817.38	1,440.59	1,389.50	653.46	873
	21	19,056	6,537	218	2,025	1,061	721	1,842	934	833	3,141	1,744	486.57	190.99	3,370.46	5,633.41	817.38	1,440.59	1,389.50	653.46	873
	22	25,181	6,533	228	2,453	2,185	1,510	2,221	1,203	1,504	4,876	2,468	486.57	190.99	3,370.46	5,633.41	817.38	1,440.59	1,389.50	653.46	873
	23	31,347	6,473	234	2,833	2,642	2,829	2,640	1,462	2,132	7,568	2,534	486.57	190.99	3,370.46	5,633.41	817.38	1,440.59	1,389.50	653.46	873

6. Rural (Java+Bali)

Provinces	*Year*	M	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	P1	P2	P3	P4	P5	P6	P7	P8	P9
	1	7,075	5,304	292	467	0	0	467	0	0	0	545	491.40	201.60	2,672.19	6,546.13	677.44	1,738.75	1,455.29	797.60	816.89
	2	8,582	5,631	129	678	0	69	633	187	170	482	603	491.40	201.60	2,672.19	6,546.13	677.44	1,738.75	1,455.29	797.60	816.89
1.West Jawa	3	11,402	6,207	165	1,006	134	270	852	375	408	1,119	866	491.40	201.60	2,672.19	6,546.13	677.44	1,738.75	1,455.29	797.60	816.89
	4	14,880	6,551	224	1,439	362	510	1,255	600	613	1,849	1,477	491.40	201.60	2,672.19	6,546.13	677.44	1,738.75	1,455.29	797.60	816.89
	5	5,461	2,996	207	189	0	65	898	373	142	283	308	405.64	115.43	2,170.14	6,192.82	652.81	1,419.53	1,320.47	740.42	692.55
	6	7,449	3,773	215	318	13	142	1,225	551	216	502	494	405.64	115.43	2,170.14	6,192.82	652.81	1,419.53	1,320.47	740.42	692.55
2.Central Jawa	7	9,843	4,534	201	401	51	257	1,438	800	397	998	766	405.64	115.43	2,170.14	6,192.82	652.81	1,419.53	1,320.47	740.42	692.55
	8	13,151	5,005	234	617	268	480	1,814	1,075	628	1,750	1,280	405.64	115.43	2,170.14	6,192.82	652.81	1,419.53	1,320.47	740.42	692.55
	9	7,719	3,508	274	38	0	126	1,283	504	574	721	691	452.04	135.16	2,239.27	6,276.90	660.87	1,399.50	1,181.37	656.85	685.18
	10	9,370	3,721	314	151	23	312	1,410	934	413	1,460	632	452.04	135.16	2,239.27	6,276.90	660.87	1,399.50	1,181.37	656.85	685.18
3.DIY	11	12,986	4,069	344	230	466	550	1,965	1,302	702	2,470	888	452.04	135.16	2,239.27	6,276.90	660.87	1,399.50	1,181.37	656.85	685.18
	12	5,333	3,161	487	219	0	46	777	103	38	122	380	415.92	115.68	2,064.23	5,995.24	645.11	1,451.86	1,268.25	543.84	628.19
	13	7,428	3,783	478	423	5	105	1,135	410	166	472	451	415.92	115.68	2,064.23	5,995.24	645.11	1,451.86	1,268.25	543.84	628.19
4.East Jawa	14	9,728	4,436	308	617	62	216	1,347	664	312	864	902	415.92	115.68	2,064.23	5,995.24	645.11	1,451.86	1,268.25	543.84	628.19
	15	13,267	5,146	286	1,042	282	401	1,697	933	493	1,591	1,396	415.92	115.68	2,064.23	5,995.24	645.11	1,451.86	1,268.25	543.84	628.19
	16	4,793	1,002	2,392	111	0	0	777	83	0	228	200	510.22	179.92	2,572.68	5,841.82	611.58	1,251.95	1,320.44	674.26	760.30
	17	7,352	3,429	1,116	240	0	157	1,528	228	171	222	261	510.22	179.92	2,572.68	5,841.82	611.58	1,251.95	1,320.44	674.26	760.30
5.Bali	18	10,658	5,082	757	748	59	248	1,608	339	343	1,059	415	510.22	179.92	2,572.68	5,841.82	611.58	1,251.95	1,320.44	674.26	760.30
	19	15,048	6,793	483	1,051	628	461	1,737	739	657	1,863	636	510.22	179.92	2,572.68	5,841.82	611.58	1,251.95	1,320.44	674.26	760.30

7. Rural (Sumatra)

Provinces	Obs.	M	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	P1	P2	P3	P4	P5	P6	P7	P8	P9
	1	8,783	6,186	0	1,306	0	45	817	0	135	0	294	442.35	237.08	3,049.93	6,056.59	645.42	1,333.64	1,189.04	584.94	823.
	2	11,568	6,807	120	2,088	136	177	879	61	187	364	749	442.35	237.08	3,049.93	6,056.59	645.42	1,333.64	1,189.04	584.94	823.
6. DI Aceh	3	15,561	7,461	171	2,964	175	440	1,267	192	434	919	1,538	442.35	237.08	3,049.93	6,056.59	645.42	1,333.64	1,189.04	584.94	823.
	4	20,994	7,878	265	4,244	671	757	1,724	373	858	1,957	2,267	442.35	237.08	3,049.93	6,056.59	645.42	1,333.64	1,189.04	584.94	823.
	5	7,294	3,967	1,213	116	852	0	299	0	315	0	532	466.24	212.07	3,293.41	6,578.07	659.66	1,394.45	1,250.87	711.21	848.
	6	8,945	4,749	720	850	578	58	805	50	183	143	809	466.24	212.07	3,293.41	6,578.07	659.66	1,394.45	1,250.87	711.21	848.
7. North Sumatra	7	11,969	6,555	329	1,494	160	213	1,123	131	371	506	1,087	466.24	212.07	3,293.41	6,578.07	659.66	1,394.45	1,250.87	711.21	848.
	8	15,879	7,463	328	2,245	387	405	1,777	272	487	900	1,615	466.24	212.07	3,293.41	6,578.07	659.66	1,394.45	1,250.87	711.21	848.
	9	20,514	8,024	344	3,143	815	749	2,390	461	672	1,638	2,278	466.24	212.07	3,293.41	6,578.07	659.66	1,394.45	1,250.87	711.21	848.
	10	9,427	6,449	86	651	79	53	881	69	206	468	485	480.63	205.56	3,491.95	6,190.19	644.86	1,468.19	1,423.18	704.69	760.
	11	12,428	6,736	144	1,103	78	148	1,504	140	477	1,047	1,051	480.63	205.56	3,491.95	6,190.19	644.86	1,468.19	1,423.18	704.69	760.
8. West Sumatra	12	15,483	6,944	311	1,511	296	496	2,128	196	541	1,572	1,488	480.63	205.56	3,491.95	6,190.19	644.86	1,468.19	1,423.18	704.69	760.
	13	20,492	7,423	390	2,447	675	803	2,831	291	801	2,345	2,486	480.63	205.56	3,491.95	6,190.19	644.86	1,468.19	1,423.18	704.69	760.
	14	9,906	5,153	201	1,659	0	162	1,106	0	136	174	1,315	473.43	208.81	3,392.68	6,384.13	652.26	1,431.32	1,337.03	707.95	804.
	15	12,212	5,892	198	1,983	0	126	1,770	54	226	491	1,472	473.43	208.81	3,392.68	6,384.13	652.26	1,431.32	1,337.03	707.95	804.
9. Riau	16	15,475	6,349	361	2,859	136	668	1,832	260	564	708	1,738	473.43	208.81	3,392.68	6,384.13	652.26	1,431.32	1,337.03	707.95	804.
	17	20,169	7,031	438	3,862	331	1,021	2,230	367	828	1,233	2,828	473.43	208.81	3,392.68	6,384.13	652.26	1,431.32	1,337.03	707.95	804.
	18	8,382	4,657	317	738	0	159	1,469	161	230	270	381	463.36	215.03	3,192.32	6,258.84	635.72	1,684.31	1,383.51	639.12	790.
	19	10,831	5,377	315	1,664	67	293	1,494	123	287	231	980	463.36	215.03	3,192.32	6,258.84	635.72	1,684.31	1,383.51	639.12	790.
10. Jambi	20	15,212	6,534	404	2,184	413	408	2,330	324	488	666	1,461	463.36	215.03	3,192.32	6,258.84	635.72	1,684.31	1,383.51	639.12	790.
	21	19,992	6,800	447	3,087	775	760	2,775	540	766	1,292	2,750	463.36	215.03	3,192.32	6,258.84	635.72	1,684.31	1,383.51	639.12	790.
	22	8,340	4,771	554	718	0	189	810	259	308	170	561	436.02	230.71	2,692.32	6,202.21	610.04	2,153.41	1,390.33	504.71	807.
	23	10,999	6,027	354	1,158	18	305	1,274	208	378	353	924	436.02	230.71	2,692.32	6,202.21	610.04	2,153.41	1,390.33	504.71	807.
11. South Sumatra	24	14,953	6,751	392	1,881	233	519	1,834	362	539	827	1,615	436.02	230.71	2,692.32	6,202.21	610.04	2,153.41	1,390.33	504.71	807.
	25	20,111	7,276	429	2,862	566	807	2,274	553	861	1,656	2,827	436.02	230.71	2,692.32	6,202.21	610.04	2,153.41	1,390.33	504.71	807.
	26	9,412	6,557	115	987	0	0	1,066	17	139	157	374	439.01	193.40	2,874.85	6,088.35	597.72	1,690.20	1,379.55	555.69	765.
	27	11,446	6,675	109	1,205	65	127	1,447	112	263	401	1,042	439.01	193.40	2,874.85	6,088.35	597.72	1,690.20	1,379.55	555.69	765.
12. Bengkulu	28	14,747	7,229	400	1,391	131	426	2,054	320	399	725	1,672	439.01	193.40	2,874.85	6,088.35	597.72	1,690.20	1,379.55	555.69	765.
	29	19,777	7,431	526	2,409	509	903	2,844	579	607	1,183	2,786	439.01	193.40	2,874.85	6,088.35	597.72	1,690.20	1,379.55	555.69	765.
	30	26,433	8,210	770	3,166	853	2,164	3,306	808	1,130	1,781	4,245	439.01	193.40	2,874.85	6,088.35	597.72	1,690.20	1,379.55	555.69	765.
	31	5,722	4,261	98	0	0	0	636	153	153	115	306	376.02	122.32	2,122.80	5,702.17	500.28	1,454.90	1,321.20	374.25	701.
	32	7,807	4,334	602	421	29	49	1,233	305	204	193	437	376.02	122.32	2,122.80	5,702.17	500.28	1,454.90	1,321.20	374.25	701.
13. Lampung	33	10,118	5,163	596	624	46	250	1,534	431	378	298	798	376.02	122.32	2,122.80	5,702.17	500.28	1,454.90	1,321.20	374.25	701.
	34	24,804	5,951	628	11,789	268	544	2,165	689	607	863	1,300	376.02	122.32	2,122.80	5,702.17	500.28	1,454.90	1,321.20	374.25	701.
	35	18,861	6,585	636	1,828	648	948	2,965	978	843	1,256	2,174	376.02	122.32	2,122.80	5,702.17	500.28	1,454.90	1,321.20	374.25	701.
	36	24,201	6,895	576	2,347	1,247	1,751	3,376	1,360	1,238	2,281	3,130	376.02	122.32	2,122.80	5,702.17	500.28	1,454.90	1,321.20	374.25	701.

8. Rural (Kalimantan)

Provinces	**Obs.**	**M**	**X1**	**X2**	**X3**	**X4**	**X5**	**X6**	**X7**	**X8**	**X9**	**X10**	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	**P9**
	1	9,308	6,840	271	520	166	64	632	0	261	118	436	631.52	425.16	3,681.34	9,155.38	977.09	2,695.22	2,114.26	909.87	1,257.
	2	11,707	7,399	372	1,250	126	176	1,051	79	325	211	718	631.52	425.16	3,681.34	9,155.38	977.09	2,695.22	2,114.26	909.87	1,257.
16.West Kalimantan	3	15,938	8,275	404	2,325	497	333	1,447	133	538	526	1,460	631.52	425.16	3,681.34	9,155.38	977.09	2,695.22	2,114.26	909.87	1,257.
	4	21,233	8,781	413	3,363	1,085	744	2,022	350	1,063	1,116	2,296	631.52	425.16	3,681.34	9,155.38	977.09	2,695.22	2,114.26	909.87	1,257.
	5	27,396	8,795	450	4,889	1,774	1,485	2,647	536	1,305	2,139	3,376	631.52	425.16	3,681.34	9,155.38	977.09	2,695.22	2,114.26	909.87	1,257.
	6	38,168	9,543	802	6,504	3,873	2,538	3,536	1,179	2,361	3,399	4,433	631.52	425.16	3,681.34	9,155.38	977.09	2,695.22	2,114.26	909.87	1,257.
	7	11,953	7,628	195	1,720	303	38	714	17	319	200	819	416.98	162.96	2,247.67	6,391.60	652.43	1,719.71	1,373.37	626.92	725.

	8	15,917	7,313	254	3,091	595	625	1,471	69	766	610	1,123	416.98	162.96	2,247.67	6,391.60	652.43	1,719.71	1,373.37	626.92	725.
17. Central Kalimantan	9	21,964	8,095	348	4,934	1,143	890	2,045	274	1,170	951	2,114	416.98	162.96	2,247.67	6,391.60	652.43	1,719.71	1,373.37	626.92	725.
	10	29,477	8,772	470	6,429	1,797	1,378	2,802	348	1,718	1,631	4,132	416.98	162.96	2,247.67	6,391.60	652.43	1,719.71	1,373.37	626.92	725.
	11	38,979	9,557	457	8,583	2,418	2,651	2,653	764	2,706	3,342	5,848	416.98	162.96	2,247.67	6,391.60	652.43	1,719.71	1,373.37	626.92	725.
	12	8,720	4,320	83	1,667	0	133	880	95	371	990	181	429.38	429.38	429.38	429.38	429.38	429.38	429.38	429.38	429.
	13	12,331	5,439	107	2,539	0	423	1,066	237	493	939	1,088	429.38	429.38	429.38	429.38	429.38	429.38	429.38	429.38	429.
18. South Kalimantan	14	16,247	5,751	148	3,207	7	609	1,308	230	1,040	2,625	1,322	429.38	429.38	429.38	429.38	429.38	429.38	429.38	429.38	429.
	15	21,580	6,416	219	4,229	335	963	1,809	416	1,516	3,670	2,007	429.38	429.38	429.38	429.38	429.38	429.38	429.38	429.38	429.
	16	28,130	6,945	269	5,375	881	1,726	2,452	695	2,160	4,819	2,808	429.38	429.38	429.38	429.38	429.38	429.38	429.38	429.38	429.
	17	33,703	6,970	406	5,950	1,675	2,587	3,006	903	2,708	5,852	3,646	429.38	429.38	429.38	429.38	429.38	429.38	429.38	429.38	429.
	18	9,159	6,950	0	643	0	338	379	0	214	264	371	846.06	687.37	5,115.02	11,919.16	1,301.74	3,670.73	2,855.15	1,192.82	1,788.
	19	10,483	6,049	584	1,034	88	318	672	161	318	501	758	846.06	687.37	5,115.02	11,919.16	1,301.74	3,670.73	2,855.15	1,192.82	1,788.
19. East Kalimantan	20	15,027	6,589	433	2,601	174	710	1,380	378	549	970	1,243	846.06	687.37	5,115.02	11,919.16	1,301.74	3,670.73	2,855.15	1,192.82	1,788.
	21	19,024	6,419	445	3,133	549	1,127	2,038	625	873	1,783	2,032	846.06	687.37	5,115.02	11,919.16	1,301.74	3,670.73	2,855.15	1,192.82	1,788.
	22	24,648	6,819	470	4,754	1,041	1,530	2,810	973	1,335	2,394	2,522	846.06	687.37	5,115.02	11,919.16	1,301.74	3,670.73	2,855.15	1,192.82	1,788.
	23	32,813	7,192	549	5,333	1,563	2,698	3,801	1,474	1,958	3,528	4,717	846.06	687.37	5,115.02	11,919.16	1,301.74	3,670.73	2,855.15	1,192.82	1,788.

9. Rural (Sulawesi)

Provinces	Obs.	M	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	P1	P2	P3	P4	P5	P6	P7	P8	P9
	1	4,981	3,329	122	1,071	0	0	153	0	306	0	0	447.01	205.30	2,719.41	4,161.11	689.16	1,609.56	1,096.24	599.02	72
	2	7,853	3,356	595	1,678	35	77	634	87	457	249	685	447.01	205.30	2,719.41	4,161.11	689.16	1,609.56	1,096.24	599.02	72
20. North Sulawesi	3	10,434	4,418	849	2,136	122	206	805	148	393	258	1,099	447.01	205.30	2,719.41	4,161.11	689.16	1,609.56	1,096.24	599.02	72
	4	15,164	6,601	466	2,737	430	324	1,230	247	582	745	1,802	447.01	205.30	2,719.41	4,161.11	689.16	1,609.56	1,096.24	599.02	72
	5	19,457	8,039	427	3,640	827	689	1,727	287	679	1,179	1,963	447.01	205.30	2,719.41	4,161.11	689.16	1,609.56	1,096.24	599.02	72
	6	7,140	5,747	0	357	0	0	357	0	0	286	393	431.84	317.45	2,662.90	4,546.76	665.77	1,496.27	1,210.00	597.67	83
	7	7,629	4,019	744	977	31	26	724	38	333	281	456	431.84	317.45	2,662.90	4,546.76	665.77	1,496.27	1,210.00	597.67	83
21. Central Sulawesi	8	10,368	5,456	390	1,466	159	142	1,082	184	473	375	641	431.84	317.45	2,662.90	4,546.76	665.77	1,496.27	1,210.00	597.67	83
	9	14,203	5,138	1,039	2,158	341	358	1,560	324	878	858	1,549	431.84	317.45	2,662.90	4,546.76	665.77	1,496.27	1,210.00	597.67	83
	10	18,873	6,359	846	2,977	642	877	1,916	542	1,214	1,232	2,268	431.84	317.45	2,662.90	4,546.76	665.77	1,496.27	1,210.00	597.67	83
	11	6,041	3,589	294	1,317	0	48	349	0	301	0	143	416.68	429.61	2,606.39	4,932.41	642.38	1,382.99	1,323.76	596.31	93
	12	8,024	4,550	166	1,377	16	136	645	98	451	178	407	416.68	429.61	2,606.39	4,932.41	642.38	1,382.99	1,323.76	596.31	93
22. South Sulawesi	13	10,770	5,632	188	2,199	79	224	776	208	487	327	650	416.68	429.61	2,606.39	4,932.41	642.38	1,382.99	1,323.76	596.31	93
	14	14,137	5,937	279	3,104	318	395	997	275	627	725	1,480	416.68	429.61	2,606.39	4,932.41	642.38	1,382.99	1,323.76	596.31	93
	15	18,574	5,805	310	4,190	502	789	1,280	414	1,005	1,549	2,730	416.68	429.61	2,606.39	4,932.41	642.38	1,382.99	1,323.76	596.31	93
	16	4,024	1,788	0	1,071	0	0	388	0	268	107	402	422.66	303.90	2,724.95	4,778.52	670.93	1,373.72	1,243.87	585.77	83
	17	7,498	2,986	1,187	1,642	35	10	575	69	247	208	539	422.66	303.90	2,724.95	4,778.52	670.93	1,373.72	1,243.87	585.77	83
23. South-East Sulawesi	18	9,882	4,294	952	1,918	155	82	727	107	456	391	800	422.66	303.90	2,724.95	4,778.52	670.93	1,373.72	1,243.87	585.77	83
	19	13,857	5,452	866	2,728	312	258	979	187	789	577	1,709	422.66	303.90	2,724.95	4,778.52	670.93	1,373.72	1,243.87	585.77	83
	20	17,786	6,033	681	3,509	428	892	1,206	288	1,249	949	2,551	422.66	303.90	2,724.95	4,778.52	670.93	1,373.72	1,243.87	585.77	83

10. Rural (Rest of Indonesia)

Provinces	)bs	M	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	P1	P2	P3	P4	P5	P6	P7	P8	P9
	1	6,809	1,231	1,894	1,653	72	0	997	60	268	72	562	427.53	284.18	2,723.84	4,655.04	674.58	1,420.88	1,214.34	588.42	81
	2	9,480	2,017	1,918	1,794	100	97	1,316	90	670	303	1,175	427.53	284.18	2,723.84	4,655.04	674.58	1,420.88	1,214.34	588.42	81
24. Maluku	3	12,320	2,867	1,873	2,326	166	213	1,684	171	925	612	1,483	427.53	284.18	2,723.84	4,655.04	674.58	1,420.88	1,214.34	588.42	81
	4	17,705	4,587	2,020	3,443	254	616	2,115	489	1,008	1,262	1,911	427.53	284.18	2,723.84	4,655.04	674.58	1,420.88	1,214.34	588.42	81
	5	24,386	5,390	2,267	4,267	440	988	3,077	601	1,726	2,537	3,093	427.53	284.18	2,723.84	4,655.04	674.58	1,420.88	1,214.34	588.42	81
	6	4,881	1,290	1,554	343	0	0	754	357	334	0	249	423.63	299.96	2,724.73	4,753.82	671.66	1,383.15	1,237.96	586.30	83
	7	7,363	32	4,067	458	1,128	0	583	135	409	37	514	423.63	299.96	2,724.73	4,753.82	671.66	1,383.15	1,237.96	586.30	83
25. Irian Jaya	8	9,138	1,652	3,089	910	798	201	999	25	396	0	1,068	423.63	299.96	2,724.73	4,753.82	671.66	1,383.15	1,237.96	586.30	83
	9	13,253	3,448	2,994	820	1,421	260	1,966	354	587	64	1,339	423.63	299.96	2,724.73	4,753.82	671.66	1,383.15	1,237.96	586.30	83
	10	18,393	5,299	2,412	1,175	3,209	308	2,131	738	974	299	1,848	423.63	299.96	2,724.73	4,753.82	671.66	1,383.15	1,237.96	586.30	83
	11	22,316	6,623	1,761	2,138	3,556	1,974	2,790	1,156	1,413	834	2,861	423.63	299.96	2,724.73	4,753.82	671.66	1,383.15	1,237.96	586.30	83
	12	6,239	3,923	696	335	0	107	830	0	0	0	348	419.46	164.65	2,905.57	4,856.39	704.64	1,241.89	1,197.85	563.33	75
	13	8,469	4,796	404	519	368	46	1,069	265	322	139	541	419.46	164.65	2,905.57	4,856.39	704.64	1,241.89	1,197.85	563.33	75
14. NTT	14	11,119	5,733	718	712	630	125	1,352	271	500	294	784	419.46	164.65	2,905.57	4,856.39	704.64	1,241.89	1,197.85	563.33	75
	15	15,419	7,351	790	964	1,574	285	2,012	319	817	290	1,017	419.46	164.65	2,905.57	4,856.39	704.64	1,241.89	1,197.85	563.33	75
	16	19,885	8,260	1,008	1,491	2,431	546	2,387	691	1,161	568	1,342	419.46	164.65	2,905.57	4,856.39	704.64	1,241.89	1,197.85	563.33	75
	17	26,658	9,735	866	2,181	3,483	857	3,078	868	838	2,376	2,376	419.46	164.65	2,905.57	4,856.39	704.64	1,241.89	1,197.85	563.33	75
	18	9,144	5,806	128	683	47	91	1,204	169	167	463	386	419.46	164.65	2,905.57	4,856.39	704.64	1,241.89	1,197.85	563.33	75
	19	11,565	6,886	179	902	196	156	1,452	266	257	738	533	419.46	164.65	2,905.57	4,856.39	704.64	1,241.89	1,197.85	563.33	75
15. NTB	20	14,816	7,300	231	1,507	434	322	1,872	447	519	1,234	950	419.46	164.65	2,905.57	4,856.39	704.64	1,241.89	1,197.85	563.33	75
	21	20,454	7,830	347	2,108	1,429	732	2,436	839	1,181	2,080	1,472	419.46	164.65	2,905.57	4,856.39	704.64	1,241.89	1,197.85	563.33	75
	22	26,328	7,912	280	2,823	2,617	1,312	2,618	1,020	2,093	3,225	2,428	419.46	164.65	2,905.57	4,856.39	704.64	1,241.89	1,197.85	563.33	75
	23	34,908	8,939	307	3,934	3,964	1,918	3,321	1,891	2,781	4,047	3,806	419.46	164.65	2,905.57	4,856.39	704.64	1,241.89	1,197.85	563.33	75